

Progressive Architecture

The image is the cover of the August 1975 issue of Progressive Architecture magazine. It features a photograph of a modern student housing building. The building has a complex design with blue corrugated metal siding, brickwork, and large windows. A prominent yellow staircase with a metal railing leads up the side of the building. The roof is steeply pitched with blue corrugated metal and several skylights. The background shows trees and a clear sky.

August 1975 An ARCO Reinhold publication

Student housing

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Progressive Architecture is published monthly by Reinhold Publishing Company, Inc., a subsidiary of Industrial Publishing Co. Thomas L. Dempsey, Chairman; Philip H. Hubbard, Jr., President; Harry I. Martin, Vice-President. Executive and editorial offices, 600 Summer St., Stamford, Conn. 06904 (203-348-7531).

For all subscription information write Circulation Dept., Industrial Publishing Co., 614 Superior Ave., W., Cleveland, Ohio 44113 (216-696-0300). When filing a change of address, give former as well as new address, zip codes, and include recent address label if possible. Allow two months for change. Subscriptions payable in advance. Publisher reserves right to refuse unqualified subscriptions. Professional rate (\$7 per year) is available to architectural and architectural-engineering firm personnel and architects, designers, engineers, and draftsmen employed in allied fields. Professionals outside U.S. and Canada \$18 per year. Nonprofessionals outside U.S. and Canada \$30 per year. Single copy \$3, payable in advance. Indexed in Art Index, Architectural Index, Engineering Index. Second-class postage paid at Stamford, Conn. and additional offices. Volume LVI, No. 8. Printed in U.S.A. Copy-right © 1975 Reinhold Publishing Company, Inc. All rights reserved.

August 1975

Progressive Architecture

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Cover: Chandler Village student housing (p.37) by Arrowstreet at Worcester State College in Massachusetts. Photo: Nick Wheeler.

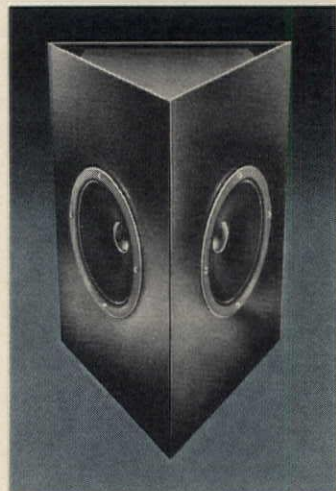


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*Reg. T.M. O.-C.F.

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DOVER Stage Lifts

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Philadelphia, Pa.

Construction Management/Consultant: Turner Construction
Company, Cincinnati, Oh.

General Contractor: Brice Building Company, Birmingham.

Theater Consultants: Jean Rosenthal Associates, Inc.,
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Dover Stage Lifts installed by
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P/A's jury, your entries

August 1975



1st jury, 1953: Victor Gruen, Eero Saarinen, George Howe, Fred Severud



1956: Huson Jackson, Marcel Breuer, Harry Weese, Gordon Bunshaft



1962: J. Johansen, R. Geddes, A. Saarinen, P. Rudolph, J. Skilling.

Every fall, the usual cycle of editorial work here at P/A is set aside for the special procedures of the annual P/A awards jury. Hundreds of entries flow into our offices from all over the U.S. and Canada to be scrutinized by a jury of professionals who contribute their time to P/A and to you.

Each jury tries to identify entries that represent new standards of excellence, promising new directions, and currently pertinent objectives. In their efforts jurors are dependent totally on those of you who decide to submit your work. For the past 22 years, you readers have participated beyond our hopes, and we thank you all. Entry forms for this 23rd annual competition are on page 17 of this issue. If you consider any of the past year's work of your office worthy of national recognition, we invite you to submit.

P/A's contributions to the program are to assemble a jury and to report the results. Putting together one of these juries (or any jury) is a delicate balancing process. We invite only individuals already recognized for their exceptional contributions, but we know it is not enough to fill a room with stars. The jury must represent the broadest spectrum of attitudes: we want jurors from big firms and little ones, from dispersed locations, whose clientele ranges from housing tenants to corporate executives, whose design methods range from computerized research to sheer intuition. Within the three-team make-up of our present juries, we try to combine complementary outlooks. This year's urban design/planning team, for instance, comprises Donald Appleyard, professor and author just returning from a year at the American Academy in Rome, and Raquel Ramati, who will be enjoying a two-day respite from her post on the urban battlefield of the New York City Planning Commission.

Whatever their individual skills, the jury must be a group capable of communicating dispassionately about the diverse work put before them. We could, of course, ensure compatibility by selecting people who already think alike—an in-group jury—but we avoid that. There are always jurors who have never met before. (This year the two California architects we have invited, Pelli and Turnbull, look forward to meeting for the first time here at P/A.)

The P/A juries have been charting the course of American architecture, with remarkable foresight, since many of us were still in school. Through their efforts, and the participation of thousands of entrants, the program has become an architectural institution.

Every year there are expressions of disagreement, or exasperation, with the results—as there will be and should be—but we are convinced that the program makes a constructive contribution. For every reader who cribs mindlessly from the latest winners, we are confident that dozens gain valuable perspective from them.

Remember, the program depends on your entries. We urge you to enter, and to make the virtues of your entry easy to grasp—no razzle-dazzle required. With your participation, the P/A Awards will truly reflect the best architecture America can produce.

John Morris Diefen

Views

Waterfront appreciation

I wish to congratulate you for the very thoughtful and comprehensive article on Venice which appeared in the June 1975 P/A.

*Giorgio Cavaglieri, Architect
New York, N.Y.*

Mr. Ford has asked that I write to you on his behalf to congratulate you on the publication of Peter Papademetriou's photographs and excellent article ("Stream of consciousness, June 1975 P/A). We are all proud of our River, have worked hard to preserve and conserve it as it should be and welcome any recognition that might contribute to the progress and direction in which we have all been so closely involved.

*Wanda I. Ford
Ford Powell & Carson Architects & Planners, Inc.
San Antonio, Tex.*

I thought the piece in the June P/A on New York waterfronts was a thoroughly first-rate piece of work—bright, breezy, skeptical and on-target.

*Craig Whitaker
West Side Highway Project
New York City*

I read with great interest your evaluation of urban waterfronts presented in *Progressive Architecture*.

I think you reported the case for Lower Manhattan honestly and with an impressive degree of understanding. You succinctly outlined the many and varied differences between Battery Park City and Manhattan Landing and placed OLMD's role with respect to

each development in proper context.

Thank you for including Lower Manhattan and OLMD in your article, and let's hope we win no "lost victories" in the future.

*Karl DuPuy
Office of Lower Manhattan
Development
New York City*

ASHRAE policy

In the May 1975 P/A you discuss energy analysis computer programs and state that "all programs adhere to ASHRAE standards." Please be advised that ASHRAE has no standards governing energy analysis computer programs. We do have procedures and algorithms which may or may not be incorporated in the programs you mention.

The following is ASHRAE's policy in this connection:

"Numerous computer programs have been developed and are being marketed with the statement that they are in accordance with the ASHRAE Handbook of Fundamentals and/or based on ASHRAE calculation procedures.

"The Society does not endorse and is not responsible for any computer programs which may or may not use information published in the ASHRAE Handbook of Fundamentals or other ASHRAE publications.

"Persons using the name of ASHRAE in connection with any computer program or persons considering the use of computer programs which infer that ASHRAE has endorsed them are hereby cautioned that ASHRAE does not make any such endorsement."

*George Reeves, Chairman
T.C. 1.5 Computer Applications
American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
New York, N.Y.*

[P/A meant only to note that the programs mentioned all recognize ASHRAE fundamentals and standards as industry criteria, not that any ASHRAE endorsement was implied. Editors]

Conservation contribution

Your May 1975 article on the rehabilitation of the Energy Conservation Station in Providence, R.I., once known as

the Stillman White Brass Foundry, is significant in that it exemplifies in a single project two major areas of concern today: energy conservation and historic preservation. Both these concerns pursue improvement of the human condition.

There was however an unfortunate and certainly unintended omission in your article. This project received \$15,000 from the Division of Grants of the National Park Service for preservation and restoration work. The public should know that the National Park Service administers such funds through each State and Protectorate's Historic Preservation Officer to private individuals. It is this person and his staff who are the prime contacts.

*Mark M. Velsey, Restoration Architect
Division of Grants
National Park Service
Washington, D.C.*

[We regret the omission, and congratulate the National Park Service for supporting a deserving project.—editor]

For the record

The KPRC Radio/Television headquarters (P/A, March 1975, p. 30) credited to S.I. Morris Associates, successor to Wilson, Morris, Crain & Anderson, was in fact designed under the auspices of Wilson, Morris, Crain & Anderson.

Clarification

P/A's article on the Roosevelt Island competition ("This Side of Habitat" July, p. 58-63) omits reference to the decision by the jurors to only select four winners (without rank) instead of the originally agreed upon eight. The jury felt strongly that only four winners should be singled out.

Moore on Stern

I found your pieces of the mutual admiration society of professors Stern and Moore (P/A, April 1975, pp. 72 and 78) rather amusing.

Moore's house with its intricate spaces and space combinations seems to be very intriguing (photographs will never do them real justice, but still I would have liked to have the view through the frame of the "bent" which otherwise looks too arbitrary).

But now to Stern's "baronial": I can-
[continued on page 14]

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not see anything "baroque" here unless you are using the word in the derogatory 19th-Century sense. To me it looks only whimsical and I have never seen a more sordid entrance to a house than the one in the *kitschig* front-façade.

But I wonder why you reserve your appreciation of "baroque" residences to Messrs. Moore and Stern whereas you have in your country quite a number of excellently designed homes which would deserve, with their rigid symmetries, reflecting pools and all the other paraphernalia of baroque design the name "baroque" in the classic sense of the word. Examples: Craig Ellwood's Daphne house in Hillsborough; Eliot Noyes's house in New Canaan. John Johansen's bridge-house over a brook is pure Baroque! You can of course call it also Neo-Palladian.

Y.K. Unger, *Architect*
Haifa, Israel

[We found Stern's house both whimsical and baroque—baroque in the exaggerated monumentality of its façade, in the willful manipulation of spatial sequences, in the ambiguities of solid/void and convex/concave relationships. Admittedly, some elements, such as the entrance, are from other sources. We see the straightforward Neo-Palladianism of the 1960s as quite a different movement, but we appreciate the reminder that it happened.—editor]

Déjà vue

I have just read your article "A muse named déjà vue" (P/A, Feb. 1975) and was startled by your remark "When German Modernism eclipsed French Academism, these classroom conversations with history ceased." This is entirely untrue but is being repeated over and over again, most recently by the new edition of the *Encyclopaedia Britannica*.

My husband came from a very old family with architectural traditions; they were intimate friends with Schinkel and Gilly, and his granduncle built the Kunstgewerbemuseum in Berlin which was totally ruined by bombs and will only now be restored. He also built the Gewandhaus Concert Hall in Leipzig which was for a long time the most famous building for acoustics.

Since my husband, when he was young, traveled extensively with his parents in Italy and later in Spain and the coast of North Africa, he was actually saturated with history and his last trip in life (when he was 85 years old) was to Paestum and to Sicily.

But when he entered architectural schools in Germany he was only asked to follow the usual Beaux-Arts tradition of copying old styles and applying them at the whim of customers, which is apparently where we have arrived now again. This displeased him very much, and he dropped out and entered Peter Behrens office.

When he opened the Bauhaus in Weimar he brought to the school his own extensive library, because the van de Velde building which he inherited had been completely stripped of everything after the war. But he found that the students wanted none of school, and it had stifled all the creative instincts they had ever had. The Bauhaus in those first years was a place which parents were so afraid of that they stopped all financial support for their children when they entered it and I doubt that an art historian would have even liked to be associated with the institute. Besides, there was not even money enough for an architectural course because my husband had been asked to improve the education of craftspeople and only gradually succeeded in widening out the aspects of the school.

From the beginning Siegfried Giedion had shown great interest for the Bauhaus and he was asked to lecture there because his grasp of art and architectural history was so totally different from the usual dull approach.

After my husband's death I found the old glass slides he had shown at that time to students and on his extensive lecture tours in Germany and foreign countries. More than half of the slides showed architectural masterpieces of the past which he used not to stimulate imitation but as an inspiration to create for our time and technical situation—emblems as well suited as the old buildings had been for their particular phase in history.

In Harvard, which had been under strictly Beaux-Arts control up to his arrival, he lifted the architectural depart-

ment out from under the control of the Fine Arts Department, but there were always courses given to the students by art historians of that department. Then he succeeded in having Mr. Giedion come to Harvard as Charles Elliot Norton professor and he stayed on for years to give seminars and to write his books. He knew more about the history of man, from the caveman on, than anybody else, and his profound knowledge and big vision was just what my husband wanted for his students.

You may not know what Paul Rudolph wrote about Gropius' teaching methods in *Perspecta* no 3, 1952, and I quote it to you here: "Although I had studied architecture for 5 years I had no sense of direction. I found in Gropius' teaching a base on which one could build, not merely a formula as so many others have. This base is, fundamentally, principles of architecture rather than sets of clichés. For the first time it became possible for me to see in traditional architecture principles still valid today. Once principles were seen one could unleash the imagination without fear of producing "Googie" architecture if the disciplines of the ages were observed. . . ."

Well, it seems we are getting now into plenty of Googie architecture and it will be all the worse because it will be done with the same kind of abandon, bad workmanship, cutting prices right and left, etc., which ruined so much of the so-called "modern architecture." I don't envy you for having to report on it. The architects are not to blame because they are in the hands of customers who have never in their life received any visual education and only want to stun their arrivals. In the daytime they reside in modern business structures, producing modern products and in the evening they retire to dreamland in Tudor or Colonial or whatever style. This is a schizophrenic attitude, meaning we are acting out publicly what we are not condoning or admiring privately and the result is a general show of impotence, and lack of pride and conviction. I am glad my husband didn't have to wade through eclecticism at the end of his life as he did have to at its beginning.

Mrs. Walter Gropius
Lincoln, Mass.

News report

A fashion show of Manhattan buildings

Buildings sway, and many sink—but curtsy? That was inevitable, as a “collection” of Wall Street area buildings paraded in fashion show manner at the opening in June of the month-long Im-movable Objects Exhibition in lower Manhattan. The twin towers of the World Trade Center, carried horizontally because they were so tall, waited almost coyly for their cue while their smaller, but senior neighbors—the Woolworth Building by Cass Gilbert, City Hall by Mangin & McComb, and others—appeared one by one, a commentator describing salient features.

The spectacle of building costumes made primarily by architectural firms was the first event in the exhibition sponsored by the Cooper-Hewitt Museum of Design in New York, a branch of the Smithsonian Institution. Federal, state, and private funds helped finance the show, which was made visible by banners hanging over the street and a printed guide selling for 50 cents at newsstands. The guide was a hit or miss proposition if approached as a means to find the buildings on exhibit. Its organization was never fully explained at the outset, and the illustrations, numbers, maps, and writeups were not coordinated in a quickly comprehensible manner.

The show was designed by Robert Mangurian of the architectural/graphic firm, Works. Dorothy Twining Globus of Cooper-Hewitt's exhibitions office directed the project, and museum director Lisa Taylor wrote the catalog introduction in which she observed that

this event was “far more complicated than staging a conventional museum show.” Throughout the month, special tours of the buildings were scheduled.

New Jersey chapter turns builder

Geddes Brecher Qualls Cunningham, Architects, of Princeton, N.J. took first place in an elderly housing competition sponsored by the Architects Housing Company of the Central Chapter of the New Jersey Society of Architects, AIA. The company, with financing through the state Housing Finance Agency, plans to build a 120-unit residence on urban renewal land purchased from the city of Trenton.

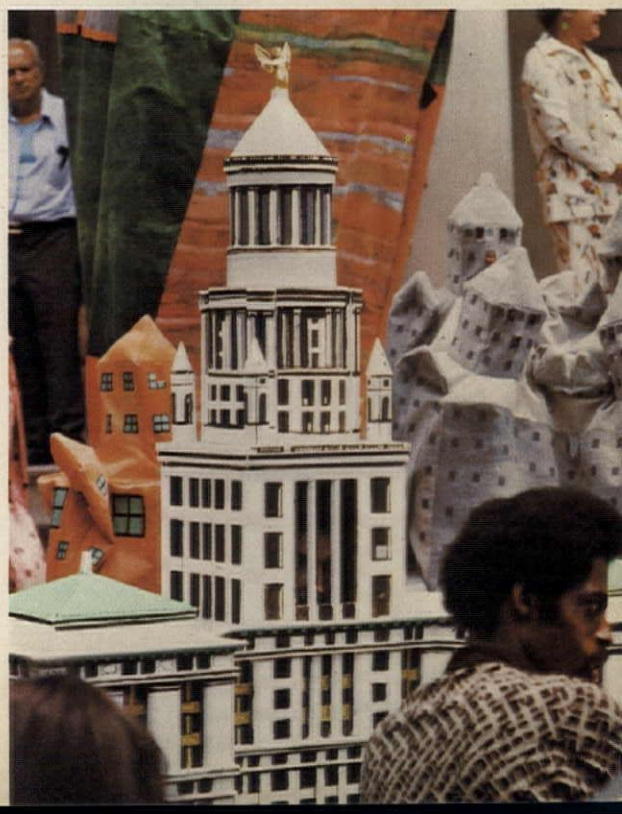


Photos: David Morton.

Man talking to Marine Midland Bank, which is holding cube sculpture by Noguchi (above).

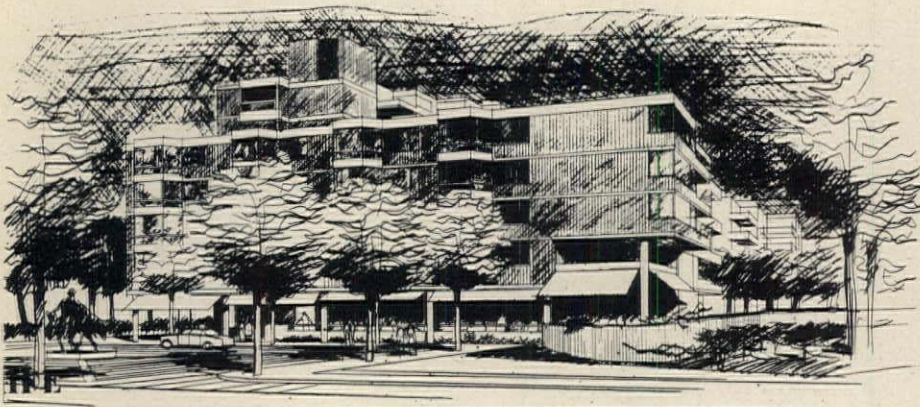


U.S. Customs House (above) by artist Red Grooms. Anonymous buildings (below) in downtown Manhattan.



News report

Winning entry by Robert Geddes, dean at Princeton University. Units in this scheme address Douglass Place and Assunpink Creek.



Second place winners in the competition were Fred Travisano and Lee Weintraub (a landscape architect), both from Trenton, and third prize went to John S. Rhoads of Trenton, collaborating with Carmi Bee and Ned Cherry of New York.

The jury consisted of three architects and a sociologist: Ted Leibman, chairman, Samuel Brody, and Harold Edelman, all of New York, and Sandra Howell, PhD, of Boston.

Honorable mentions were received by: Harrison Fraker of Princeton; Robert Meyer of New Brunswick; George Pearson of Lawrenceville together with Dennis Wiechnik, Robert Scheren, and Gary Wasko; Ismail Rifaat of Watchung; and Robert Miller of Springfield.

The program called for a budget of \$25,400 per unit on a site bounded on the north by Front Street, a commercial thoroughfare; on the south by a winding creek being landscaped by the city for a pedestrian walk; a cul-de-sac, Douglass Place, to be completed by the city this summer on the west; and by an alley, warehouses, and townhouses on the east.

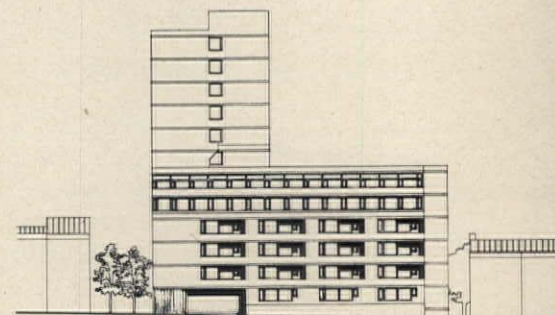
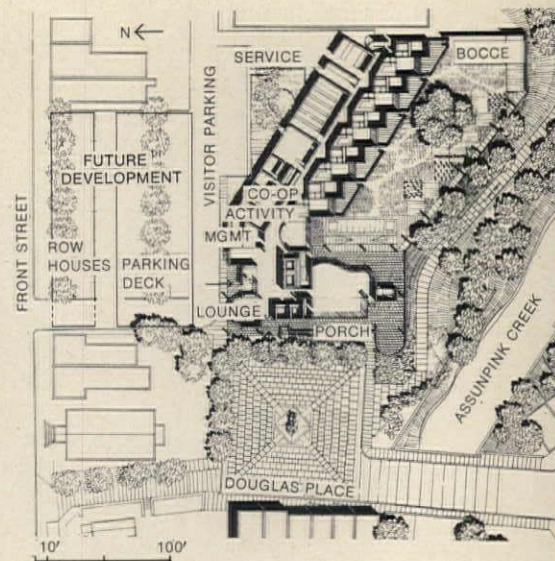
The winning scheme anticipates great activity around Douglass Place and provides a raised front porch for the purpose of viewing the neighborhood comings and goings. The required 40 parking spaces are at grade along Front Street while a lounge overlooking the lot also permits "watching," an actively pursued pastime of the elderly. The building line along the street would be maintained, however, by a wall which also would serve as a gateway. Future development, such as

row houses and parking deck, could be built on the site of the parking lot in this scheme.

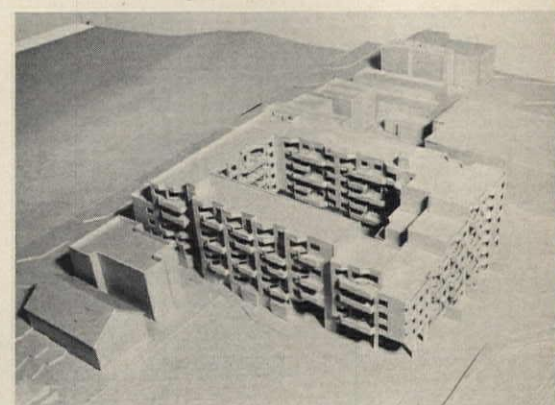
Fred Travisano, second place winner, who also is assistant city planning director of Trenton, said the competition was particularly significant because otherwise the housing would never be financed through the H.F.A. "because it's too radical."

Jules Gregory, one of nine directors of the Architects Housing Company, remarked that for the first time in a long time, chapter members "were talking about architecture and not business."

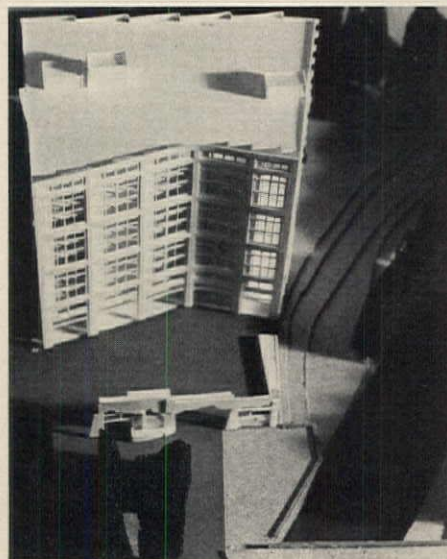
Not only has the chapter, through its six-month-old housing company, initiated the project, arranged for financing, and selected the design, but it also will operate the residence after the project is built. [AC]



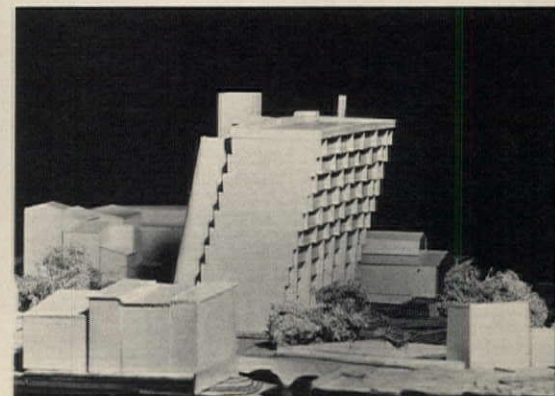
Second place winner by Fred Travisano and Lee Weintraub has a major entry on both Front Street and on Douglass Place.



Third place winner by John Rhoads, Carmi Bee, and Ned Cherry is organized around a central court for sunlight and security control.



One of 26 entries in the competition, this scheme by Michael Graves adheres to the 25% site coverage limitation imposed by the New Jersey Housing Finance Agency.



Each floor of the honorable mention entry by Ismail Rifaat and Robert Miller steps back from an enclosed, single-loaded corridor.

Recent advertisement in a New York newspaper real estate section comments on the stormy career of the Huntington Hartford Gallery, now the New York Cultural Center, designed by Edward Durrell Stone. The gallery opened in 1964.

From advocacy saga to academic criticism

Allan Temko of the *San Francisco Chronicle* raised his voice for "gonzo" architectural journalism; Professor Juan Pablo Bonto spoke for scholarly review; and architecture analyzer Harvey Z. Rabinowitz showed his slides in behalf of the nitty-gritty perusal of buildings in use. These and a dozen or so other architectural writers, educators, and architects amplified the idea of "Criticism and Architecture" in Milwaukee at a recently held University of Wisconsin conference arranged by Professor Wayne Attoe.

The calling of criticism—one that exists more in theory than in journalistic practice—was damned and praised but mostly bemoaned by the working press and panelists specializing in design criticism. Speeches by historian Vincent Scully, architects Denise Scott Brown and Charles Moore, and attorney George Lefcoe set the philosophical/political stage by surveying the "values" of the profession. They preceded the speakers who addressed the theme of criticism.

Allan Temko was the most fiery of the theme speakers. His anecdotal saga told of the heyday of San Francisco journalism when a critic helped stop the Embarcadero highway 16 years ago and when a newspaper could even defeat a bad design for a \$70 million bridge. ("I'm from the *San Francisco Chronicle*," Temko said he told the engineers, "and I tell you that we won't rest until it is undone.")

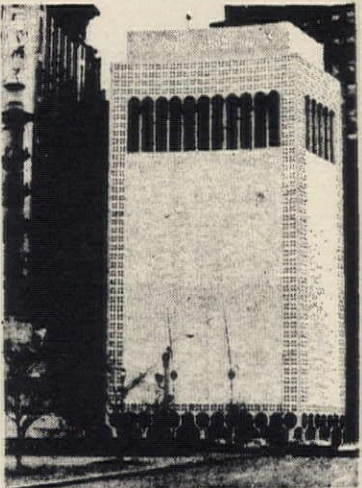
Beyond advocacy, the critic must

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Critics, from left, Allan Temko, Jane Holtz Kay, Michael Kirkhorn, Ed Hinshaw, and David Kinchen.

pose questions, said Temko. "Why are the [rapid transit] cars 70 ft long?" designer Charles Eames asked the builders of BART. No one could tell him, related Temko. "These are questions you must bring to the public."

So much for the power of the press: Temko now writes irregularly at the *Chronicle* and the rest of the conference's reporters and critics confessed themselves a weak and more timid (deliberately so) lot. A scant four architecture critics work fulltime on U.S. newspapers or general magazines. "I'm at a loss—except in terms of time and money—to say why," said Ed Hinshaw, editorial director of Milwaukee's radio station WTMJ.

From popular criticism the conference veered to the equally lean "measured criticism" of the profession. Mil-

waukee design professor Rabinowitz carried out such criticism at a midwest school system. He took instruments to measure the design results, such as light and sound levels, at four institutions: a traditional elementary school; a 1966 model lined with clerestory windows; a more complex spiral structure; and a 1972 design based on open classroom ideas.

His slides—a critical device more potent than words—showed the good (students sprawling on a staired courtyard), and the bad (superfluous light blinding out ill-placed blackboards and a lack of flashing that caused leaks). Without criticism, mistakes don't teach; if mistakes don't teach, the designer is doomed to err again.

"The architect doesn't have very good information to make his deci-

News report

sion," concluded Rabinowitz. Like the more popular, if superficial, newspaper evaluations, "very little measured criticism has been done," he said.

Criticism in time—over the time that is history—concerned Professor Bonta, an Argentinian recently come to Ball State University's department of architecture. Taking Mies's Barcelona Pavilion for an anatomy of *Architectural Interpretation*, Professor Bonta divided criticism into five stages—from first, blindness, to final, oblivion. His fascinating coda traced critical reactions to the Pavilion: surprisingly, this pivotal piece in modern architecture was ignored in its early days ("blindness," stage one) before it got its tentative approval ("Pre-canonic response," stage two). Then followed the reverence ("canonic response," stage three). Next in the evolution of criticism came stage four, "dissemination" of the gospel—universal space, etc.—and finally, today's stage five—skepticism and "re-evaluation."

"It has been frequently said that Mies's architecture 'speaks for itself,'" said a paper condensed from the professor's new book. "This is only a myth. Neither his architecture nor anyone else's can speak for itself; it always requires a collective effort of interpretation. The ultimate incorporation of architecture into culture is the result of the work of critics no less than of designers."

Sculptor James Wines, president of SITE (Sculpture in the Environment), said "Art is critical in itself. It makes most criticism irrelevant." Thereupon the artist, who likes to call his work "controlled demolition," showed slides of his tumbling, deteriorating, designs that lap over the façade of boxes and make architecture itself equally irrelevant. [Jane Holtz Kay]

[Ms. Kay is architecture critic for *The Nation*, and she is a frequent contributor to other publications.]

Quarter of a century at Aspen conference

Dimensioning its experience of 25 years, the recent International Design Conference in Aspen, Colo., was a

landmark in continuity of dissent with, in Leo Lionni's words, "... the enormous drugstore that is around us." Chaired by industrial designer Niels Diffrient, partner in Henry Dreyfus Associates of New York, the program for the June conference featured a dialogue between intuition and intellect carried on by such luminaries as Harland Cleveland, James Marston Fitch, Betty Friedan, Edward T. Hall, George Nelson, Jonas Salk, Duccio Taurin, and William H. Whyte. Punctuated by films, exhibits, a ballet scoring lesson, and a balloon launching, the conference ended with a birthday party.

Mrs. Walter Paepcke, wife of the deceased founder of the conference series, discussed the IDCA concept as a cross-fertilization of ideas between men of business and of design. However, the dominant group in attendance this year was students, making up about one-third of the 1243-person audience. There were 76 architects attending, and 47 states and 14 foreign countries represented. The overall scene led an Aspen newspaper critic to complain of "technicians masquerading as artists," and one questioner to lament that a seminar panel was not aware of the audience's level.

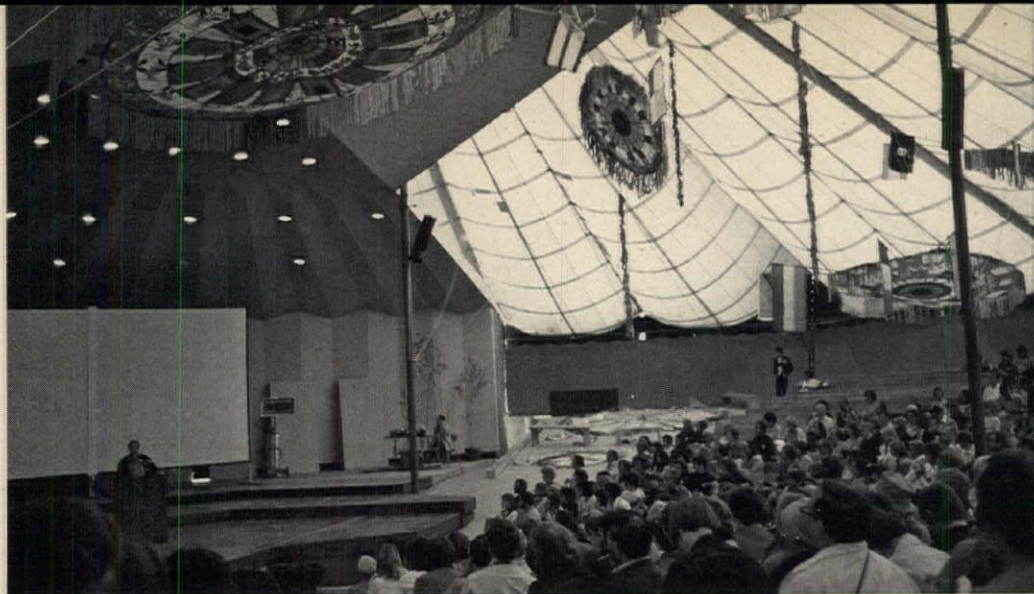
Unfortunately, men of business were not obvious on the program, either, as it seemed to favor the social and natural science community. The generally good presentations plumbed in depth chairman Diffrient's theme, "Dimensions of Experience." "Classical science," he said, "pretends to be an intellectual activity, but our minds are not that fail-safe. Human beings have ... a soul, a metaphysical nature. We are on the threshold of an era of more effective design."

Psychologist Sam Keen's excellent talk on "Myth and Design," began with the axis-mundi principle of global Order and Design (GOD) exclusively motivating mankind up to the Industrial Revolution. He defined the major current societal myths as: all value is created by action; more money is better; order is better; and response to the enemy is the organizing principle. He used the United States defense budget as an illustration. Defining dilemmas, Keen gave us a choice between the good life or the great life. To achieve the latter, he said we must attack massive environmental problems with massive designs and recognize that "A designer who is not political is a contradiction in terms." The third dilemma: it is not worth living in an undesigned or completely designed society.

Industrial designer/architect George Nelson defined the civilized city as "where the people devote energy, time, and money to creating a more attractive urban setting"; and criticized present components by remarking that "Most modern buildings look best when seen through the branches of trees, preferably in full bloom." He detested the "blunt ramming of a cube into the sky." Following these thoughts, architectural historian Fitch was concerned about problems of the tall Hancock buildings in Chicago and Boston and worried about the ability of the current designer to deal effectively with nonvisual information.

Narrating an exciting film presentation of his four-year study of pedestrian movement on plazas and sidewalks in New York City, William H. Whyte gave convincing evidence of the superiority of the Seagram Building Plaza and Pa-

Photo: Ralph Warburton



Industrial designer/architect Eliot Noyes speaking in Music Tent at Aspen.



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ley Plaza as two of the best in Manhattan. An essential characteristic of a good plaza is to provide places to sit.

The architecture seminar featured a panel composed of Fitch, Bill Lacy of the National Endowment of the Arts, and Julian Beinart of MIT and moderated by Philadelphia architect Richard Saul Wurman. As they are concerned with architectural education, their presentations and the discussion that followed emphasized problems in this area. Lacy pointed out the relative lack of interesting projects that were submitted to his agency by schools of architecture, and indicated he favored grant proposals which emphasized measurability.

Beinart spoke of his current work on the Mellon Foundation study of architectural education, undertaken by eight eastern schools, which involves school visitations and analyses of typical students. Fitch called for a total environmental approach in architectural education—promptly branded a dead issue by one member of the audience and an approach to be learned on the job by another.

A healthier discussion involving audience and panel ensued on the question of determining a good school of architecture. The panel seemed to agree that both five and six year programs turn out good architects, (though there may be some difference in definition of the latter term,) that hero-orientation in the schools is on the wane, and that it is very difficult to advise the prospective student about where to go to school. There was no mention of such basic quantitative dimensions as faculty qualifications, program budget, studio space, or library acquisitions, which are the mainstay of a quality education.

This stimulating conference, like the design professions this year, labored under adverse environmental circumstances. For instance, one longed for management participation. On the other hand, the Colorado temperature was unseasonably cool and the Music Tent, designed to carry 1½ in. of snow, was threatened with 3 in. At times, its rippling by the exterior wind surpassed that occasioned by a few of the speakers. Leaving the conference, on the wood-chip path, one's confidence in



R/UDAT team at New Rochelle: from left, Roger Creighton, transportation; Karl Radov, economist; and Randi Sahni, Milo Thompson, and Isaac Green, architects. Not shown is Larry Melillo, chairman.

its future was strengthened by the knowledge that next year's would be chaired by New York landscape architect Paul Friedberg, who now has the opportunity to resolve these kinds of impacts with more than statements. [Ralph Warburton]

Painless city planning: R/UDAT

The American Institute of Architects is removing the pain, to some extent at least, from American town planning by providing impartial design teams for areas that request them. The Regional/Urban Design Assistance Team (R/UDAT) is in its eighth year, and to this date has visited 27 cities. The method of operation is swift. Team members from different parts of the country—preferably from as far away from the client city as possible—arrive at the start of the weekend.

They are briefed by city officials and tour the area by car and on foot. Talks and discussion follow, and then hours of hard work drafting a plan. Members for a R/UDAT team are chosen for their ability to draw quickly as much as for their expertise.

By Monday a presentation for the public is ready and usually includes a bound brochure and slides. From there it's up to the city to decide what happens to the plan. For example, Phoenix voted \$100,000 to evaluate R/UDAT's proposals a week after the visit. Some take no action, and this matter is of concern to the AIA, which is exploring

what can be done to improve follow up.

Recently when R/UDAT visited New Rochelle, N.Y., to tackle a revitalization of the downtown, the Chamber of Commerce later asked the local AIA sponsors to give the chamber the same slide show that was given at the public presentation. In every city the impetus for having a R/UDAT is locally generated. The city or region must make the request, and the local AIA sponsors the visit.

Problems to be considered may center on just a few city blocks or may focus on the city as a whole. Team members serve on a volunteer basis and agree not to accept any commissions which might arise.

In New Rochelle, the R/UDAT idea began with two newspaper articles in the *Standard-Star* questioning the city's lack of a workable master plan. Councilman Walfredo Toscanini, an architect, was quick to propose R/UDAT as a start, and the Westchester chapter of the AIA agreed to act as sponsor. Dan Kearin, a local architect, was appointed coordinator of the planning committee, and after five months of intense organizing efforts, the R/UDAT weekend began.

Despite only three hours sleep after a charette the night before, the six team members—four architects, an economist, and a transportation consultant—made a 2½-hour presentation to the capacity audience at city hall.

The proposed solution for the town center—as distinguished from a central business district which people leave at the end of the day—was a double an-

chor concept of two major commercial centers linked by a pedestrian system.

"This should not be taken as a plan for the city center," the team stated in its brochure. "It is simply an attempt to show how the different concepts can be made to work together."

Questions from the audience indicated that the residents were expecting more concrete solutions—specific recommendations—than the team purposely offered. But one enthusiast stood up and declared: "Let's throw the old city plan out the window and start over again." [AC]



Constantinos Doxiadis

Doxiadis dead at 62 in Athens

Greek city planner and architect Constantinos Doxiadis died in Athens on July 28 at the age of 62. He founded the planning firm, Doxiadis Associates, in 1953, which rapidly became an international organization with offices now in 11 countries. The Doxiadis planning method of "ekistics"—the science of human settlements from *oikos*, Greek for house or dwelling—has been applied widely in developing nations that sought his services. Recently his office has been active in Saudi Arabia. His major projects in the United States have included Eastwick in Philadelphia, said to be one of the largest urban renewal projects in the U.S.; the civic center renewal for downtown Malden, Mass.; and the Urban Detroit Area Study, 1970.

As with views developed by most strong-minded theorists, his met with opposition from various quarters, but his practice seemed to flourish, nevertheless.

From 1963 to 1972 he hosted annual floating party-seminars, the "Delos Symposium," during which such enviable guests as Buckminster Fuller and British economist Barbara

Ward cruised the Mediterranean, exchanging ideas.

Doxiadis was born in Bulgaria of Greek parents in 1913 and was taken to Greece during World War I. He holds degrees from the Athens and Berlin-Charlottenburg technical universities and numerous honorary ones from universities in the U.S. where he frequently taught as visiting lecturer. His only son will assume Doxiadis' position as chairman of the corporation, which is run by Stamatis Chataris, who became president two years ago.

Hope for St. Louis' Laclede's Landing

A new try at developing Laclede's Landing as a controlled, high-quality multi-use environment combining historic preservation with compatible new construction is being made by a combination of civic and business interests. The Landing is an enclave of warehouses built on the west bank of the Mississippi River since the great fire of 1849.

Interest in the area has grown as construction progresses on a convention center three blocks west. Nine years ago two redevelopment plans were advanced—one calling for total demolition and the other for partial clearance—and the second won city approval but no financial support.

A new plan forwarded by a redevelopment corporation of Laclede Landing property owners and civic interests would give the corporation the power of eminent domain and tax abatement, and the right to approve renewal plans submitted by individual developers. [George McCue]

Permanent home for a Trova sculpture

Many believe that New York is dotted with monumental outdoor works of contemporary sculpture, but the truth is that few works are on permanent display. They appear for a time as part of an event and then are sold to a collector or removed to a museum or gallery.

Such isn't the case with a 22-ft-high stainless steel piece by St. Louis sculptor Ernest Trova. The work was donated by the construction firm Kreisler Borg Florman of Scarsdale, N.Y.,

and installed last spring on the Heywood Tower plaza in New York's upper West side. Immediately children of the neighborhood adopted the art work as a thing to play on. Benches soon will be installed in the plaza for more passive spectators. Heywood Tower is an urban renewal project for low and middle income families.



Trova's Profile Canto West.

Chicago releases riverfront plan

Chicago's Department of Development and Planning has issued a 36-page publication entitled *The Riveredge Plan of Chicago*. Unlike Burnham's Plan, it is not the kind to stir men's minds, but it is important as a city-generated document, in a city that usually leaves planning to the business community.

The plan is primarily important as a statement of policy for the riveredge. These policies range from increasing the recreation potential of the river-edge to improving the water quality in the Chicago River. In the accomplishment of these objectives, the city will depend on the private sector which, for all its good intentions, often manages to do the right thing at the wrong time and the wrong place. Zoning, the one control the city has, despite the use of the Planned Development Ordinance, is still overly permissive, existing to encourage investment rather than acting as a creative urban design tool.

The plan is certainly a positive step but seems to offer no new or "heroic" solutions for giving the main branch of the river back to the city. What we can anticipate, based on the published ren-

News report

derings, is more development like the Marina City complex or the IBM plaza, and more strip, landscaped, city parks at dock level like the one between La Salle and Clark Streets—all welcome improvements. [Stuart Cohen]

Art Institute offers 'Space Design' course

The Department of Design and Communication at the School of the Art Institute of Chicago is offering a new course called "Space Design" concerning interior architecture for human habitation. The teaching methods will include seminars using media projection techniques presented by two architects on the faculty, Don Kalec and John Kurtich. Additional information is available by writing Kurtich at the school, Michigan Ave. at Adams St., Chicago, Ill. 60603.

O solar mio! shopping for sunshine

It's official: the sun's for sale. The newly formed Solar Energy Industries Association (SEIA) introduced its members and their technologies to the nation in Washington, D.C. earlier this summer. Its "Solar Industry Expo '75," a first, had something for everyone.

And everyone seemed to be there. Tinkers, gadflies, sages, fast talkers, scientists, designers, builders, industrialists, technocrats. They heard SEIA and federal officials describe the state of the solar art in terms sympathetic to their own project. There was also time for play. Some three dozen exhibitors brought their latest solar energy equipment to Washington.

Nevertheless, basic doubts haunted the sun worshippers. Even finding qualified consultants for practical or theoretical solar advice remained a problem for many visitors. So many private groups and government agencies have solar programs that one Hawaiian home builder begged for a "one-stop" solar office. The Energy Research and Development Administration (ERDA), which joined the Federal Energy Administration (FEA) in assisting the Expo, offered a national solar energy

information hotline: (202) 634-4333.

Uncle Sam stood out as the undisputed godfather of the industry. His ERDA, FEA, NASA, HUD, DOD, NSF, GSA, and NBS (see P/A, June 1975, p. 54) are jointly administering programs of research, development, and demonstration for ERDA-23, the National Plan for Solar Heating and Cooling. The "feds" exhorted SEIA to champion high professional standards, a code of ethics, and industry self-regulation. Still, many expressed the belief some police action would be inevitable.

While charlatans prey on baby industries like solar energy, a healthy skepticism surfaced in long hours of seminar discussion. Challenges to Expo speakers came as much from the floor as from the podium. Home builders planning solar homes despaired of suspicious building departments and vindictive property assessors. Small solar research organizations complained of federal parsimony in contract awards. Federal officials found themselves cooling down overheated claims by some speakers. In a lighter moment, SEIA awarded its first "Solar Man of the Year" to Rep. Mike McCormick (D-Wash), the energy advocate.

Virginia Knauer, special assistant to the President for consumer affairs, spoke for many participants in urging the solar industry to build the institutional structures needed to accommodate consumers, government, and private enterprise. She warned that the public may already be "oversold" on the new technology. Judging from the enthusiasm at Expo, that *ennui* has a long wait ahead. Common sense says an industry built on sunshine must be terribly optimistic. [RY]

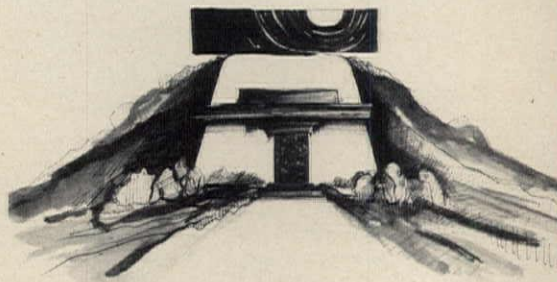
UDC architect to go to Teheran

Theodore Liebman, until recently Chief of Architecture for the New York State Urban Development Corporation, has been appointed to an assistance team that will advise the city of Teheran, Iran in developing planning guidelines for its rapid expansion. The team, formed by Harvard University's Institute for International Development, will be funded by the World Bank. The task force includes economists, sociologists, planners, and urban designers

who will work closely with the staff of the Teheran Development Council Secretariat for two years.

Bronze doors looking for portal

Kappy Wells, sculptor and daughter of architect Malcolm Wells, whose theories of underground architecture have been published in P/A (June 1974, p. 59), also is a supporter of her father's concepts, and last year she designed a pair of bronze doors for one of his buildings. The building failed to get approval from the local zoning board and the doors, funded by a grant from the New Jersey State Arts Council, are in safekeeping (underground) from would be bronze thieves.



Drawing: Kappy Wells.



In perspective

Procrustean preservation

First you slice off the rear of historic houses to make them fit into a developer's scheme for a new hotel/office building. Then you stretch the floor area allowable under present zoning so that the mid-block tower can overwhelm the houses. Then you eviscerate the interior spaces that don't happen to fall to the same floor level as the tower lobby. Visitors to Eleusis who ran into Procrustes and his beds at least came away with their innards intact. Not so with the New York's landmark Villard Houses if developer Harry Helmsley gets his way. Helmsley leased the six townhouses designed in

1882–1886 by McKim Mead & White from the Archdiocese of New York, that has owned this grouping on Madison Avenue from 50 to 51 Streets since 1947. Next Emery Roth & Associates designed a 52-story shaftlike tower at the landmark's rear.

Before partial demolition and construction can begin several decisions must be made by the city. One decision—to be voted on first by Community Planning Board 5, then by the Board of Standards and Appeals, after September—concerns the zoning variance requested for the tower's height. Because Helmsley argues that building around this landmark is an economic hardship he seeks an FAR of 19.87 instead of the allowable 16.3. If the vari-

ance is granted, one is faced with the shadowy prospect of other such brutal combinations.

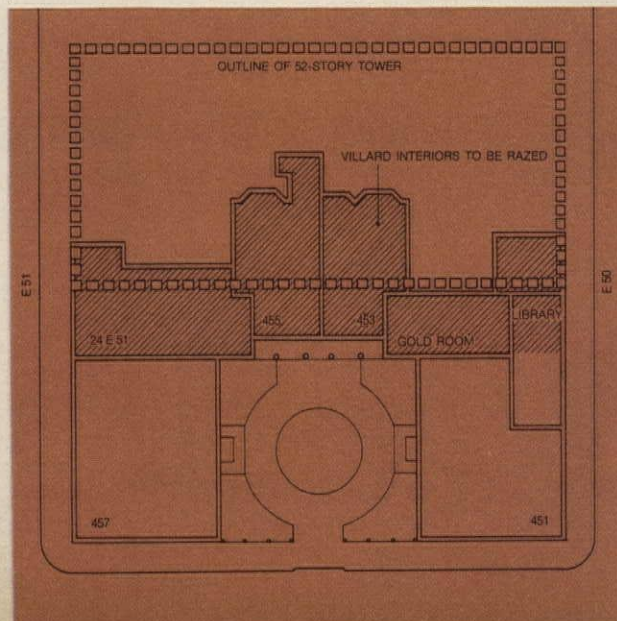
Meanwhile the Landmarks Commission must yet give a certificate of appropriateness (they have already given a conditional one) on the altered exterior. They want to see an effort made towards preserving interiors (shown below), but know when push comes to shove, the landmarks law hasn't always stood up in court. None of the legal mechanisms can really do enough—make the new building go away and guarantee preservation of these interior spaces. Perhaps public pressure (being spearheaded by the N.Y. Landmarks Conservancy) will do something about that. [SS]

Photos: Nathaniel Lieberman (courtesy N.Y. Landmarks Conservancy)



The Gold Room (above), stairwell to No. 455 (below).

The library (above) stair in No. 451 (below) of which the future is undetermined.



In perspective

The wheels of Sonoma Grove

Given the differences in ideology and economics, the worlds of professional architecture, housing development, and counter-culture rarely intersect. Therefore we salute a unique achievement in the San Francisco region: a privately developed, professionally designed trailer park sanctioned by Sonoma State College as a housing facility for the new student lifestyle in the home-built home-on-wheels.

In many ways Sonoma Grove is a logical solution to a familiar university town problem. Plagued by inadequate housing and high rents, students have taken to living in trailers. Despite its solid middle class origins, this new migrant population has a gypsy image not easily tolerated by the residential communities around these institutions. Nor do the often ingenious expressions of the wood-butcher's art used to domesticate the vehicles counter-balance the problems of waste disposal, parking, and general to and fro that accompany street living. In the eyes of most citizenry, a van is not a home.

Most developers are far from interested in the social or economic housing problems of alternate lifestyles. But Alexis Tellis, a custom builder in the San Francisco Bay area since about 1950, is a remarkable exception. In the 1960s he was responsible for two notable contributions to urban design and preservation in San Francisco: One Jackson Place, a 19th-Century building rehabilitated for offices and shops; and the Visual Communications Center, a ferryboat converted to offices. Both projects have won AIA Honor Awards.



North of the "barn," and endless variety of lifestyles (above). Interiors (below, left) reflect the same variety; ceiling is of rug samples. Domestic activities (below, right) are ad hoc.



Next Tellis began to dream of combining floating residential communities with mobile home parks, but the problems of financing and acquiring a site proved too difficult. Nonetheless he had acquired enough knowledge of mobile home building to see a special opportunity in a newspaper account of the student squatter problems near Sonoma State College. With the cooperation of the housing departments of both the college and the nearby city of Rohnert Park he proceeded with plans to develop a parcel of land inside the city limits as a trailer park, zoned as a planned unit development. Landscape architect Max Shardt was hired to do the site plan.

Although the biggest problems were planning for the underground utilities including telephone and television, and the clustering of vehicles, another

real challenge was accommodating the large number of trailers without obliterating the landscape. The land was zoned for 114 apartments housing four students each; the 151 slots that were provided actually house about 257 students, cutting the density nearly in half. Shardt feels that it is still too dense by about 20. But privacy exists, and he is confident that in time the vehicles will be well insulated by foliage.

Since residents garden their own slots for personal use, the green-way affords sitting and sunning for the adults and some gaming for the children. The loop street is the favored pedestrian route and recreation area.

Although the site has been more or less sorted out into a scholarly north end and a gregarious south end there are still problems with invasions of privacy. Since the number of school chil-



Interior of the "barn."

dren far exceeded expectations, additional areas to serve this age group would be of benefit. But the problem of kids-on-the-loose is nothing compared to the problem of dogs.

Parking for secondary vehicles was another unforeseen difficulty. Once the trailer gets to its slot it is generally immobilized while the student is transported by his car. The solution was leasing an extra area for parking.

Social services are provided in the community building and two bath-houses. Architect Audrey Emmons incorporated the results of student interviews and a survey of student unions on other campuses into a building which, along with a post office, laundry, store, and kitchen, has a large central meeting hall focused on a monumental fireplace. In form and construction the building strongly reflects the California barn, both a traditional design reference in Bay Region architecture and a symbol of the youthful back-to-the-land movement. It sits gracefully on the broad, flat plain edged with a line of hills at the horizon, scarcely betraying its modern role. Since most of the vans are small enough to be claustrophobic, the central space functions as everyone's living room. It is well scaled and simply finished to absorb the wear and tear.

After a year of operation one unsolved point is the student management component which, Tellis feels, is not motivated to take the long view—to see that the place is fully occupied to

keep the rents down and to care for it in a way that will let it age gracefully. On the other hand, the more vocal of the student management group, for whom efficient capital management is not so important, testify to a feeling of growing restrictions and loss of control.

But for now the place is alive and well as an example of good architectural practice honestly and admirably serving community needs. Chances are that it will even serve as a valuable archetype for the future.

[Sally Woodbridge]

Report from Escondido

Escondido, Calif. has acquired what LaJolla architect Sim Bruce Richards calls an instant landmark, mainly through Richards' efforts. Last year, while looking at an Oceanside site, he recognized one of Irving Gill's two Oceanside schools of the early 1930s—although it was boarded up and the bell tower was gone. Richards found out that it was owned by a developer who intended to raze it to salvage the sash and oak flooring.

San Diego and its neighboring cities have been preoccupied for a decade with saving the works of this pioneer of reinforced concrete construction, which was a help to Richards in finding a taker for the 6000-sq-ft school. Finally Escondido, a small city founded in 1885 but shy of landmarks, sent 15 city councilmen and preservationists the 17 miles to Oceanside to inspect the building, with the result that the following week the city council voted

\$50,000 to move it to one of the city's numerous parks.

Gill, San Diego's only nationally famous architect, arrived there in 1893 from Chicago, where he had spent three years in the office of Adler and Sullivan. Ten years later he had the largest office in San Diego, and soon he introduced his stripped-down style, a wedding between the Missions and the technology of concrete. He tried out his new style first in a laboratory for Scripps Institute of Oceanography at LaJolla in 1908, followed by a small children's hospital, then a hotel in LaJolla, the latter the only one remaining. But San Diego is dotted today with large and small houses of concrete which are extended into gardens by long pergolas of heavy redwood timbers—or what Gill called "green rooms"—terraces off living rooms with vine-covered trellising.

His most revered work is the LaJolla group, gifts of Ellen Scripps to the city over the years 1906–1916, consisting of five buildings for Bishop's School, a caretaker's house, the Women's Club, and a community center. The last two were tilt-up (the community center's wall, 60-ft-long, being tilted into position).

Although Gill pioneered various structural systems in concrete, the school board of Oceanside in the depression year of 1931 preferred studs and plaster, which has simplified saving the school.

Among contributions of Escondido citizens to relocating the school was one from a local lumber yard, which donated materials to the builder-developer to replace the sash and flooring he had lost. [Esther McCoy]

Escondido's instant landmark—a 1930s school by Irving Gill.



News report



Products displayed in company headquarters

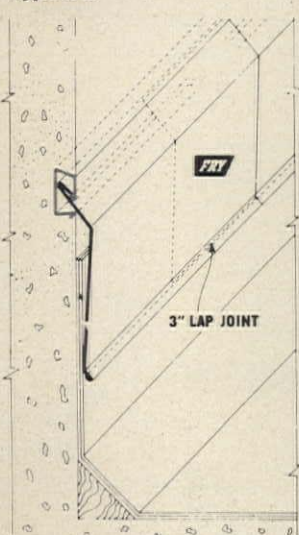
No, the idea isn't new. It is accepted procedure for a product manufacturer to want to incorporate the company wares in a major way. But at Azrock Floor Products, the interiors take tiles beyond the standard uses, making "a strong, individual statement," according to company president William

Clark. Housed in a slope-walled San Antonio structure by Neuhaus & Taylor, Azrock's quarters display the broad range of tile products, using them to form not only floor designs, but wall surfaces as well. The installation, by the company's design staff, varies for each area, to allow the creation of a great number of custom effects. Azrock also liked the economy of using its tiles for interior design.



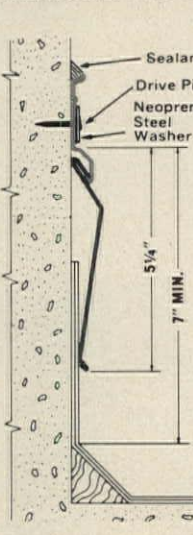
FRY SPRING-LOK PERMANENT FLASHING SYSTEMS

CONCRETE FLASHING SYSTEM Type CO



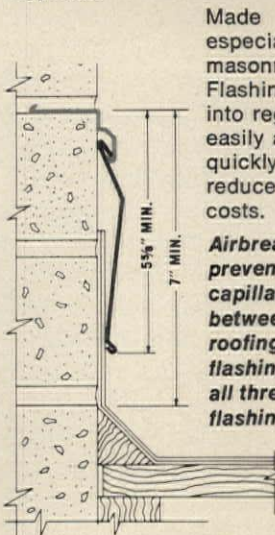
Reglet is designed especially for placing in concrete to take roof flashing. Taped to prevent invasion of grout. Flashing snaps instantly into reglet without screws after roofing is applied. Flashing is easily removed from reglet for re-roofing.

SURFACE MOUNTED FLASHING SYSTEM — Type SM



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Personalities

Harry A. Anthony, AIA, AIP, professor and chairman of the Department of Urban Planning, School of Environmental Design, has been named the 1975 Outstanding Professor for California State Polytechnic University, Pomona.

Robert A. Propper, principal of Propper/Elman, New York design consulting firm, has been named to the American Institute of Graphic Arts National Advisory Council on Education in the Graphic Arts.

Harry Harmon, FAIA has been named executive vice chancellor of the California State University and Colleges.

Anthony Catanese has been named dean of the University of Wisconsin-Milwaukee School of Architecture and Urban Planning.

Calendar

Through Aug. 31. "A way of life . . . Alden B. Dow" exhibit, Midland Center for the Arts, Midland, Mich.

Through Sept. 21. Exhibition of photographs documenting work by Charles and Henry Greene, Walker Art Center, Minneapolis.

Sept. 24-26. Conference on Neighborhood Conservation, McGraw-Hill Conference Center, New York City. Write Eugenie Cowan, 325 E. 72 St., New York, N.Y. 10021.

Through Oct. 19. "Art for Architecture: Washington, D.C. 1895-1925" exhibit, Renwick Gallery, Washington, D.C.

Through Nov. 9. "A Modern Consciousness: D.J. De Pree and Florence Knoll" exhibit, Renwick Gallery, Washington, D.C.

Aug. 30. Deadline for entries in an awards program conducted annually by the Federal Highway Administration of the U.S. Department of Transportation to recognize programs contributing to a more aesthetic highway environment. For information contact the Department of Transportation, Federal Highway Administration, Office of Engineering, Highway Design Division,

Washington, D.C. 20590.

Aug. 31. Deadline for entries to the P/A Awards Program.

Aug. 31. Deadline for entries to the Energy Conservation Awards Program, Owens-Corning Fiberglas Corporation, Toledo, Ohio.

Sept. 11-12. Transportation structures conference/workshop, St. John's University, Staten Island, N.Y. The conference is co-sponsored by the Transportation Administration of the City of New York, the American Society of Civil Engineers, Research Council on Performance of Structures, and the Metropolitan Association of Urban Designers and Environmental Planners.

Sept. 15-17. National conference on noise control engineering, sponsored by the Institute of Noise Control Engineering and the National Bureau of Standards, Gaithersburg, Md.

Oct. 9-12. International Building Exhibition, Exhibition Park, Toronto, Canada.

Oct. 27-30. Annual conference of The Producers' Council, Inc., Sonesta Beach Hotel, Key Biscayne, Fla.



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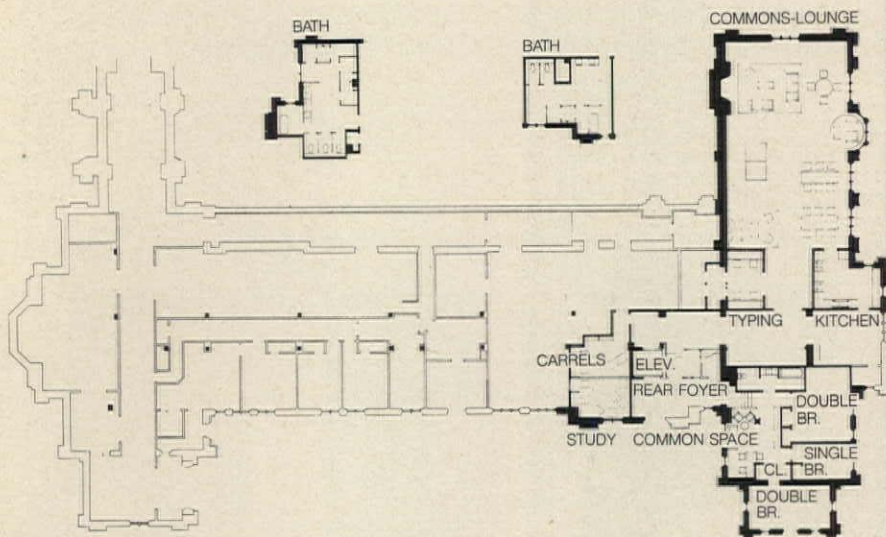
Showrooms: Chicago, New York, Minneapolis, Dallas, San Francisco, Seattle.

In progress

Nearing completion is renovation of Claflin dormitory dining area into a commons-lounge; trunk storage rooms will be converted into bedrooms.



1 Discoveries of La Brea Museum.



2 Basement pantry at Wellesley dorm (below) converted into a study.

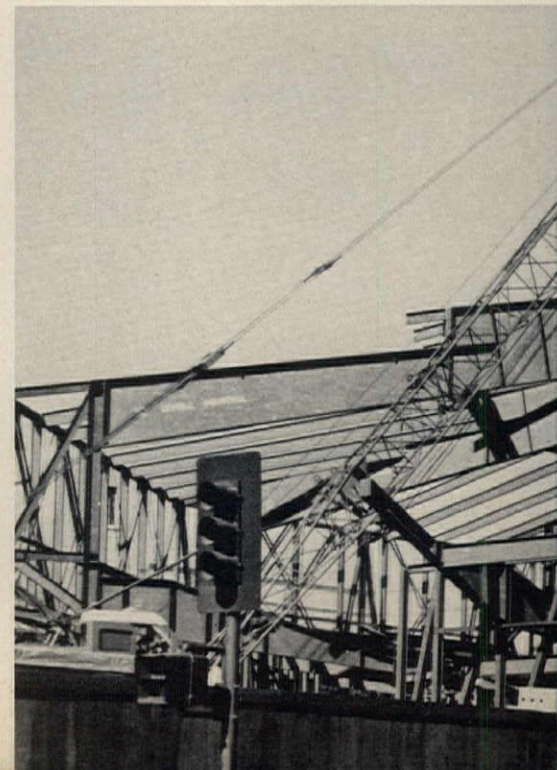


1 Landscaped museum—The George C. Page Discoveries of La Brea Museum in Los Angeles' Hancock Park will open in July 1976 to an anticipated 1.5 million visitors annually. The museum was designed by Thornton, Fagan, AIA & Associates of Pasadena, to house specimens recovered from the La Brea Tar Pits. The 48,000-sq-ft museum will cost an estimated \$2.5 million and is part of the Los Angeles County Museum of Natural History.

2 Updating Wellesley dorms—An on-going renovation program at Wellesley College in Massachusetts is turning the under-used formal living rooms, dining halls, and commercial kitchens in the dormitories into spaces for the contemporary lifestyle: informal lounges, study/libraries, and student kitchens. Work was completed last year on the first 2 of 13 dorms by A & H Browning Architects, of Arlington, Mass.; the firm subsequently undertook renovation for a third hall. In the process, the architects also discovered additional usable space which they are turning into bedrooms for the students—the first rooms, reportedly, to be added to the campus in nearly 25 years. The present work will be completed in time for the fall term.

3 Move to downtown Detroit—William Kessler & Associates has moved from its office of 20 years in the suburbs of Grosse Pointe to downtown Detroit, into a renovated late 19th-Century structure. The Detroit Cornice and Slate Building, 1897, is owned by J.A. Citrin Sons Co., for which Kessler did the recent interior renovation while overseeing restoration of the Victorian metal façade. The move supports Kessler's participation in the rebirth of the core area where the firm also is engaged in a half-dozen other major projects.

4 Preservation and Prudence—Ellis/Naeyaert Associates of Warren, Mich., has opened a



downtown Detroit office in a townhouse of elegant Italianate detailing. Its plans for adapting the city's oldest house into an office primarily consist of interior renovations. The Antoine Beaubien Townhouse was built between 1845 and 1851 on land which Louis XV deeded to the Beaubien family and which also is the site for Detroit's newest development, the Renaissance Center by John Portman & Associates of Atlanta. Being downtown is convenient for Ellis/Naeyaert, which is providing independent architect-engineer services to 33 leading institutions financing Renaissance Center.

5 Night vision laboratory—A contract has been awarded to Hains Lundberg & Waehler/Architects, New York, for a \$7 million laboratory at Fort Belvoir, Va., 25 miles southwest of Washington, D.C., for the U.S. Army Corps of Engineers. The four-floor building is the Night Vision Systems Laboratory where government research will be conducted on seeing in the dark (for 24-hour effectiveness of the armed forces) as well as for such peacetime applications as helping the visually handicapped. The building will have a 7-ft interstitial space above each of the three laboratory floors—one of the first applications of this technique for housing mechanical equipment outside of hospital construction. The fourth floor will be administrative offices. Completion of the project is expected in 18 months.

6 Pasadena church—The Gothic revival Pasadena Presbyterian Church was so damaged in the California earthquake of 1971 that it had to be demolished, and its successor, under construction, should be ready in time for dedication Oct. 12. Designed by John Andre Gougeon of Pasadena, the new structure is built of earthquake-resistant steel; and recalls the former church by embodying abstractions of the lines and proportions of the Gothic arch.



3 Kessler's renovated building (above, below).



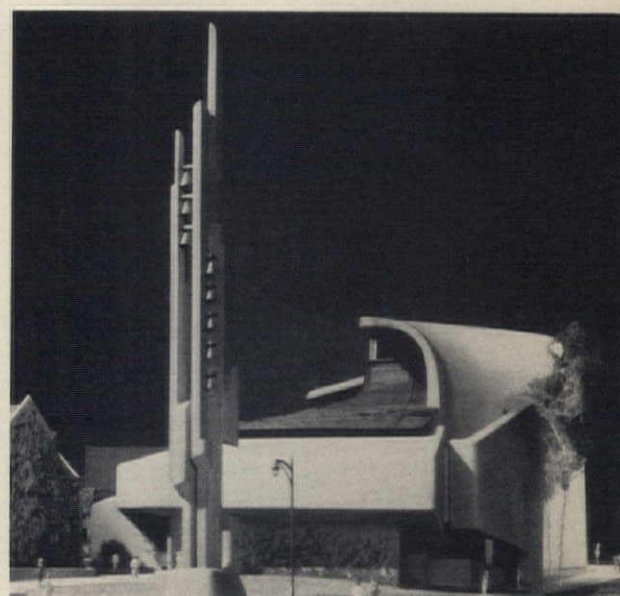
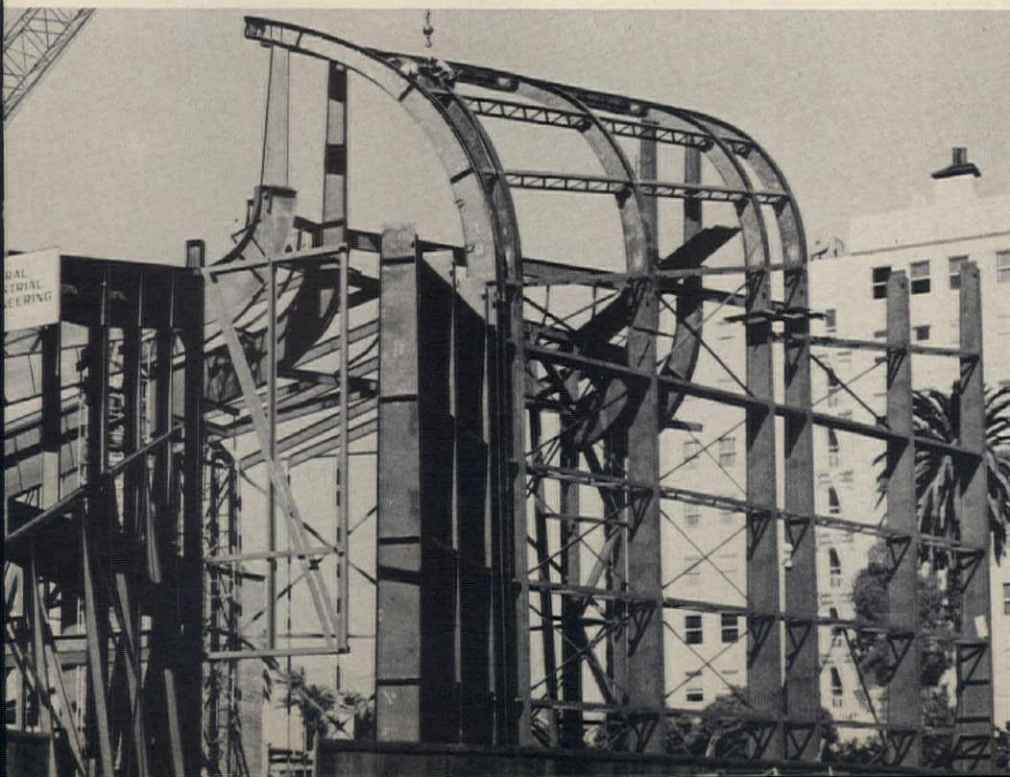
4 Townhouse to be remodeled.



Detroit Cornice and Slate Building.



5 Night Vision Systems Laboratory.



6 New church (above, and left) replaces one demolished in earthquake.



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Beds of Academe

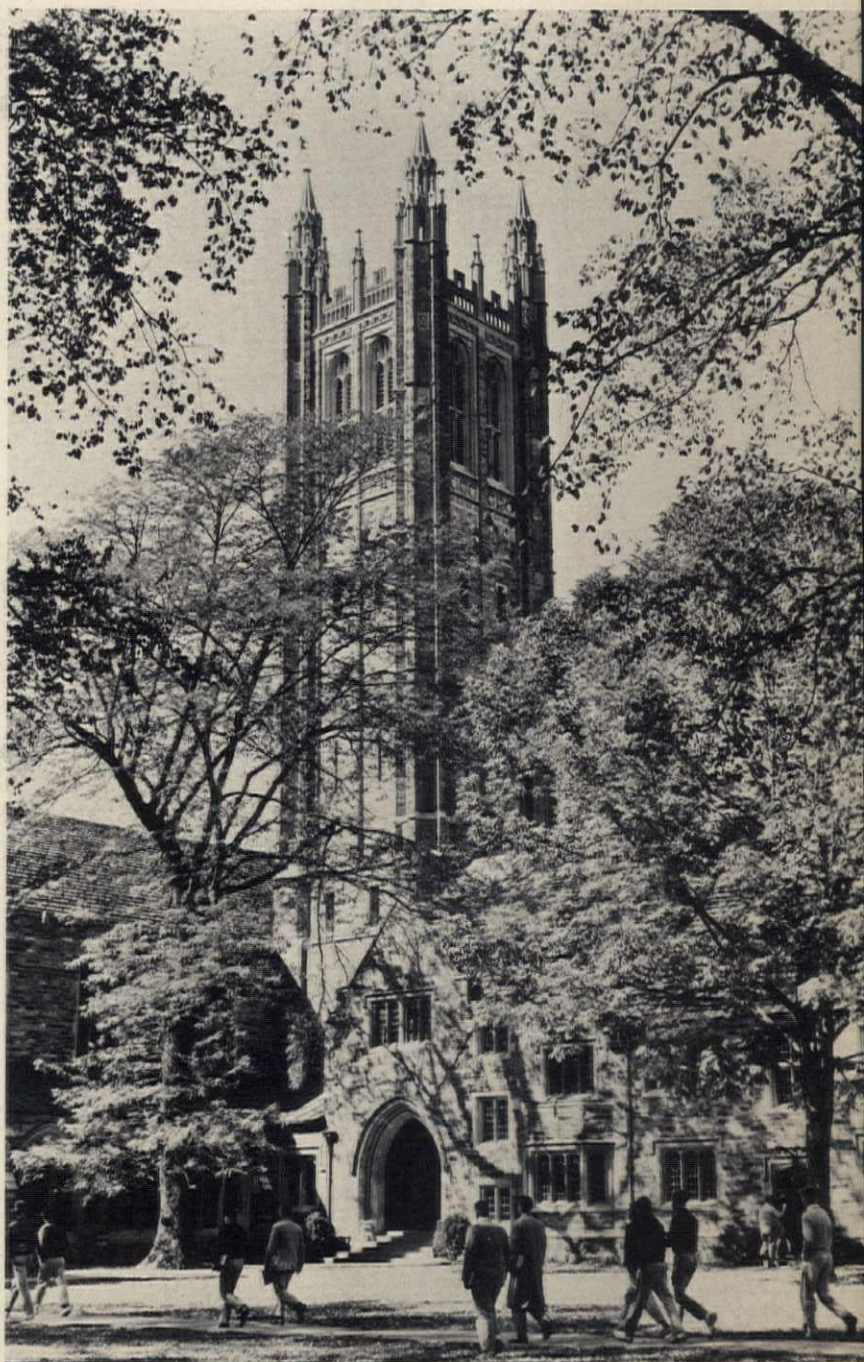
On-campus housing seems to be making a comeback, but some significant changes have been made along the way in program and architectural design.

The image lingers on. A collegiate-Gothic residence hall nestles under a grove of tall oak trees. Students quietly move through its flagstoned, sunlit courtyards and four-story halls, pausing here and there to speak earnestly with a professor. A few bars of Chopin can be faintly heard emanating from a piano deep within the recesses of the wood-paneled and chintz-upholstered living rooms. The mythic image, which corresponds to an earlier reality typical of a number of schools, was distant from the picture students were often presented during and after the 1960s' college construction boom.

High-rise, Y-shaped, square, or slablike structures clad in a flat-colored brick, now jut above dreary treeless stretches of land. Inside, linoleum, fluorescent lights, formica, and vinyl surface the interiors. Instead of fireplaces to gather around, nooks and crannies to hide in, window seats to read on, trees to look at, impersonal lounges and monotonous bedroom cubicles predominate. Although attempts at connections between architecture and behavior run a danger of being specious, one is tempted to hypothesize (or empathize): without any trace of tradition, without a variety of living units, or any architectural character in the environmental setting, it is no wonder long-accepted institutional rules and regulations would begin to weigh so heavily on a student population that was asserting itself as preceding generations had never dared—or cared—to do.

In the late 1960s, buildings—especially new dormitories—frequently were vandalized, or at best misused. Students moved off campuses in droves at their earliest opportunity. According to Educational Facilities Laboratories' (EFL) report in 1973 on "Student Housing," campuses are "littered with huge high-rise dorms that are partially or entirely empty."

School administrators were justly concerned. The dormitory or residence hall has long been recognized as an integral part of the educational experience. As Howard Adelman emphasizes in his book *The Beds of Academe*, student residences have traditionally fostered "social re-



The collegiate-Gothic dormitory of the 19th Century . . .



Photo: Josh Burns, courtesy EFL

... lost a little in translation to the post World War II high-rise idiom.

Beds of Academe

sponsibility and character development through the creation of community spirit." Throughout, the history of universities (occasional student riots notwithstanding), the residence hall in America has increasingly emerged as an acknowledged force in the maturation process of the country's educated adults. Here students would learn to study together, live together, and prepare themselves for their responsibilities as leaders of tomorrow.

Besides the school administrators' fear in the early 1970s that they were producing partially educated vandals and drug dealers for those leadership roles, they were faced with another more tangible fear. Empty halls meant empty coffers—at least so far as the long-term self-liquidating loans for new construction were concerned. Authorities began to think of ways to attract students back to campus. First they began to give students more choice and responsibility in how they would live. Some of the most institutional dorms were remodeled with layouts and interior furnishings changed by the students. Old ones have been renovated and updated. Snack bars were opened in dormitories, meal hours and meal ticket arrangements were made more flexible. Some dormitories were transformed into living-learning centers with special supplementary facilities located in the hall to allow residents to pursue one particular area of study. Certain universities offered different lifestyles in the dorms ranging from the luxurious (maid service and meals) to the bare-bones room without board.

With regard to new construction, universities and college administrators have begun enlisting students' participation in the programming and planning of their housing. In certain cases, the students are involved in the final selection of the architectural design. While the students' general preference for a variety in living accommodations (especially with individual bedrooms) is often unfeasible, one desired dwelling type, the two-bedroom apartment unit, has become quite commonplace by now. Low-rise housing, too, seems widely and wildly favored over high-rise towers. The reasons are obvious: low-rise walk-ups respond most closely to the active and erratic schedules of student occupants, who desire quick egress to the outdoors. Furthermore, stu-

dents can form strong identification with, and attachments to, the dwelling units within. And walk-up housing relates more closely in scale to the existing context of frequently low-scaled buildings.

So the trend is now back to campus housing, notes Paul Abramson, editorial director of *American School and University* magazine. Increased rents in off-campus housing, high crime in urban areas, and the inconvenience of grocery shopping and cooking, are negative factors also making dormitory living more palatable.

Meanwhile student housing construction is slowing down. While students have increased in numbers from 6.1 million in 1969 to 7 million in 1974, enrollment is expected to level off by the 1980s because of the drop in the birth rate. Whereas the Department of Housing and Urban Development used to make long-term loans, that program was suspended two years ago. State colleges are finding budgets squeezed by their legislatures; private institutions are running high deficits. And the cost of construction has skyrocketed. According to *AS&U* magazine estimates, four-year colleges were spending \$1.89 billion in 1974 for total campus construction and would spend \$3 billion in 1975. Of those figures, it appeared 11.2 percent would be devoted to residence halls.

Most of the buildings shown in the following pages were constructed before the financial situation became as critical as it is today. Nevertheless, they reflect a concern for college budgets as well as students' lifestyles and housing preferences.

At the Massachusetts State College, Worcester, low-rise apartments (p. 37) are designed to carefully fit into a wooded site. Students participated extensively in the programming and design of the units—the result is a variety of apartment units—including "communal" 14 person ones.

In the case of the college housing at the Brockport campus of the State University of New York (p. 42), an industrialized building system was used to provide low-rise apartment units at minimal cost. Besides using systems construction, the architects allied themselves with a contractor to win a fixed-price competition for the housing. Some students served as jurors to select the scheme.

At the University of California, Berkeley (p. 48), a student cooperative association four years ago built (with the aid of HUD's college housing program) a small-scaled complex to offer a variety of apartment types—from studios to town-house duplexes—all with individual bedrooms. The prototypical complex had to meet the needs for high density and security as well as having to blend with the surrounding residential neighborhood.

Harvard University's residence halls (p. 52) had to fit into a small site and the historic context of Harvard Yard. The decision to build there was made in accordance with the long-standing tradition that all freshmen live in the Yard. The program—single bedrooms, central dining hall—is also traditional. Not traditional is the employment of fast-track construction techniques to build the complex, and the coed (alternating floors) arrangement.

The final article, based on a study made at the University of Massachusetts, Amherst (p. 56), shows how the unpopular double-loaded corridor high-rise dormitories can, with simple interior modifications, be transformed into acceptable living quarters. [Suzanne Stephens]

Chandler Village, Worcester State College, Mass.

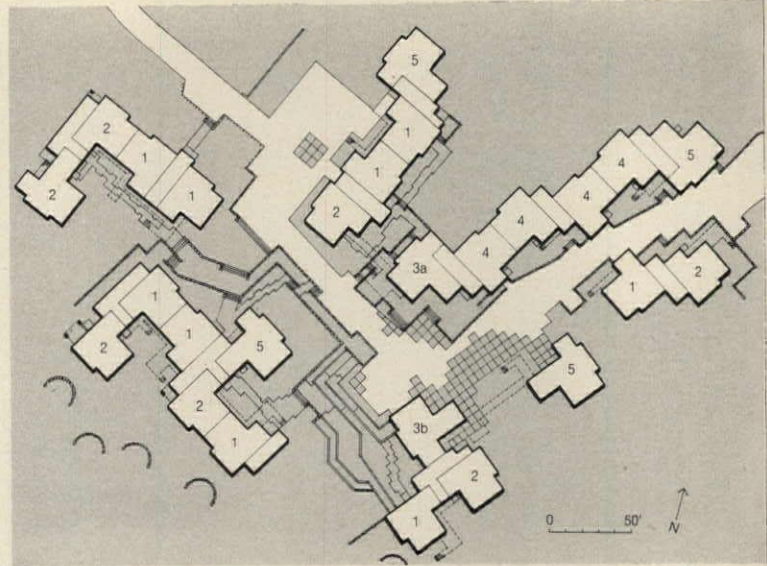
Student's village



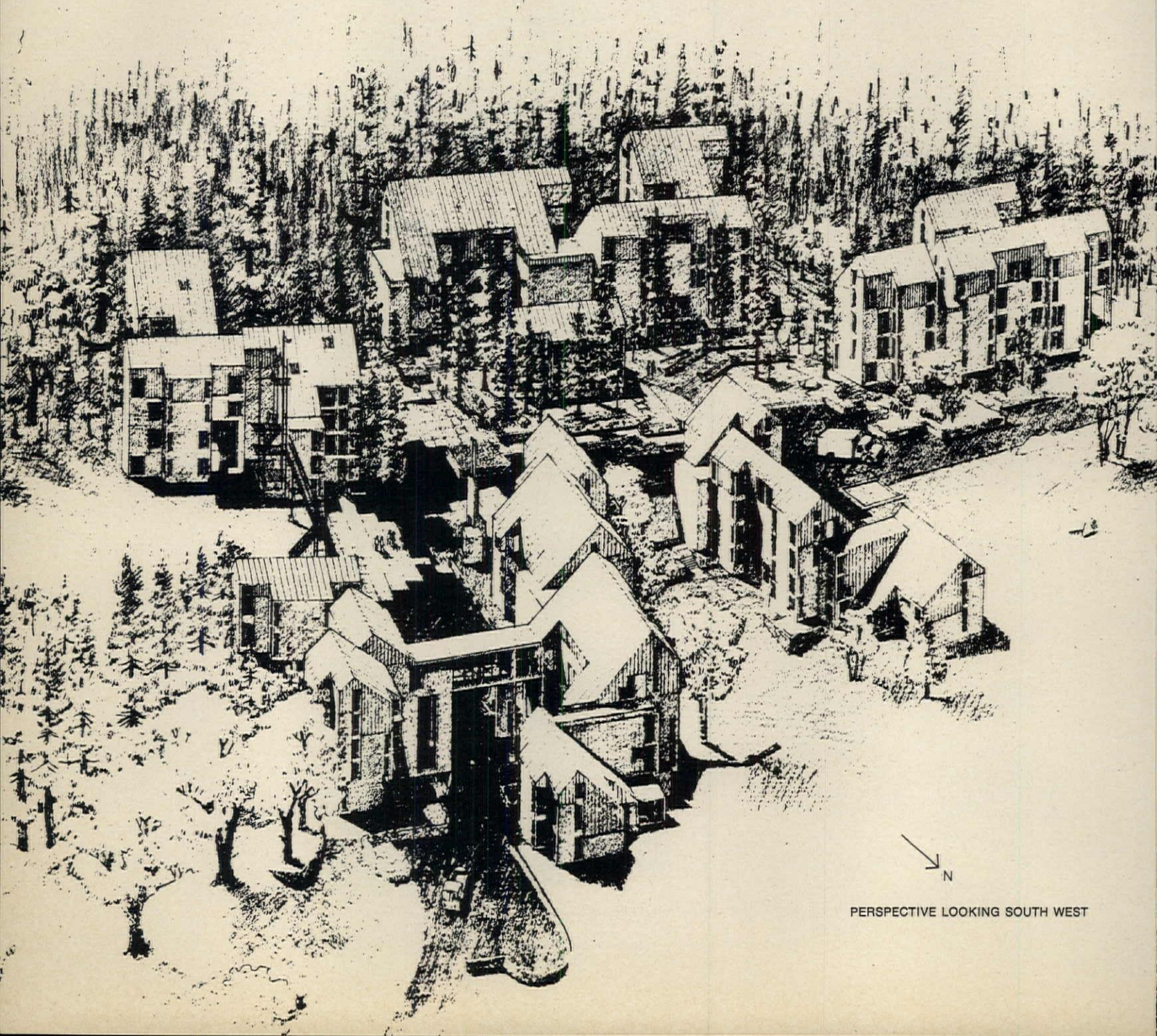
Chandler Village, Worcester State College

At Worcester State College's new garden apartment dormitories, 500 students are given a choice of living alone or in groups that can include as many as 14.

If there was ever a case of true user participation, it can be seen in the new Chandler Village dormitories designed by Arrowstreet for Worcester State College in Massachusetts. There were some old dormitories on campus, but they had not been used in years because the school had become an all-commuter college. This, however, was one of the things WSC wanted to change. The school realized the advantages of housing a central core of students on campus who would identify with it, rather than having students who would come in for only a few hours a day and then leave. In addition, the college wanted to initiate some new programs,



Six building types are included in the 26 houses of Chandler Village.



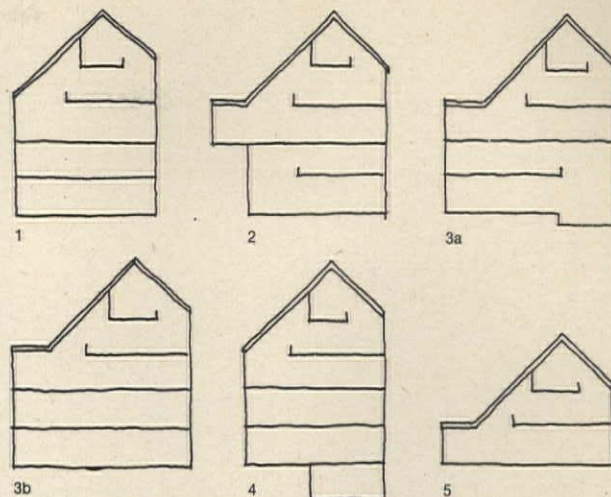
such as nursing, that required residency.

In 1970, a committee of three students, three faculty members, and a dean began studying dormitories to gather ideas about what WSC might build. Once the information was collected, it was discussed at meetings that were open to the entire student body. Next, the architects hired a student to travel the East Coast to report on student living; he identified 14 distinct lifestyles. Following that, the architects hired 12 WSC students to study residence halls on campuses throughout Massachusetts. Having gathered all of the information, the architects published a 135-page booklet for faculty and students to read and comment on, followed up by a questionnaire mailed by the architects to the entire student body, asking what kinds of living arrangements would be most preferable. When the returns came back, the information was analyzed along with the earlier studies, and the results showed that what would be most appealing would be garden apartments that could accommodate six different lifestyles ranging from single-room occupancy to communal collectives of 14 students.

The 500-student village, now completed, comprises 26 two-, four-, and five-story "houses," which are either joined together in varying numbers or are separate; all are clustered along a curving terraced street in the woods at one end of the campus. There are six basic types of the brick- and aluminum-clad, steel-frame buildings; each is composed from 11 standardized parts that include living and dining rooms, kitchens and baths, bedrooms and sleeping lofts, and three additional parts that include the steel fire escape/balconies, the unit entry/stair tower, and the steel connectors to adjacent units.

One of the great advantages of the system of these dormitories is that the six living-type arrangements can be organized in a number of different ways within the buildings; it is the way they are organized that determines which of the six building types the house is. Within the 26 separate houses are 50 private rooms with shared baths. All of the other living quarters are apartments having kitchens, living and dining areas, and one or two baths. There are 25 four-student units with one double and two single bedrooms; the 25 eight-student apartments have single, double, and four-person bedrooms. The sleeping quarters of the eight 11- and 14-student communal collectives are designed for flexibility so they can be arranged in a number of different ways, and each of these units has its own separate outside entry. In addition, there are four "living and learning" units that eight students share with one faculty member who has a separate room, and 24 small, two-person apartments for married couples without children or for two students. The houses are coeducational, but the individual apartments in them are not.

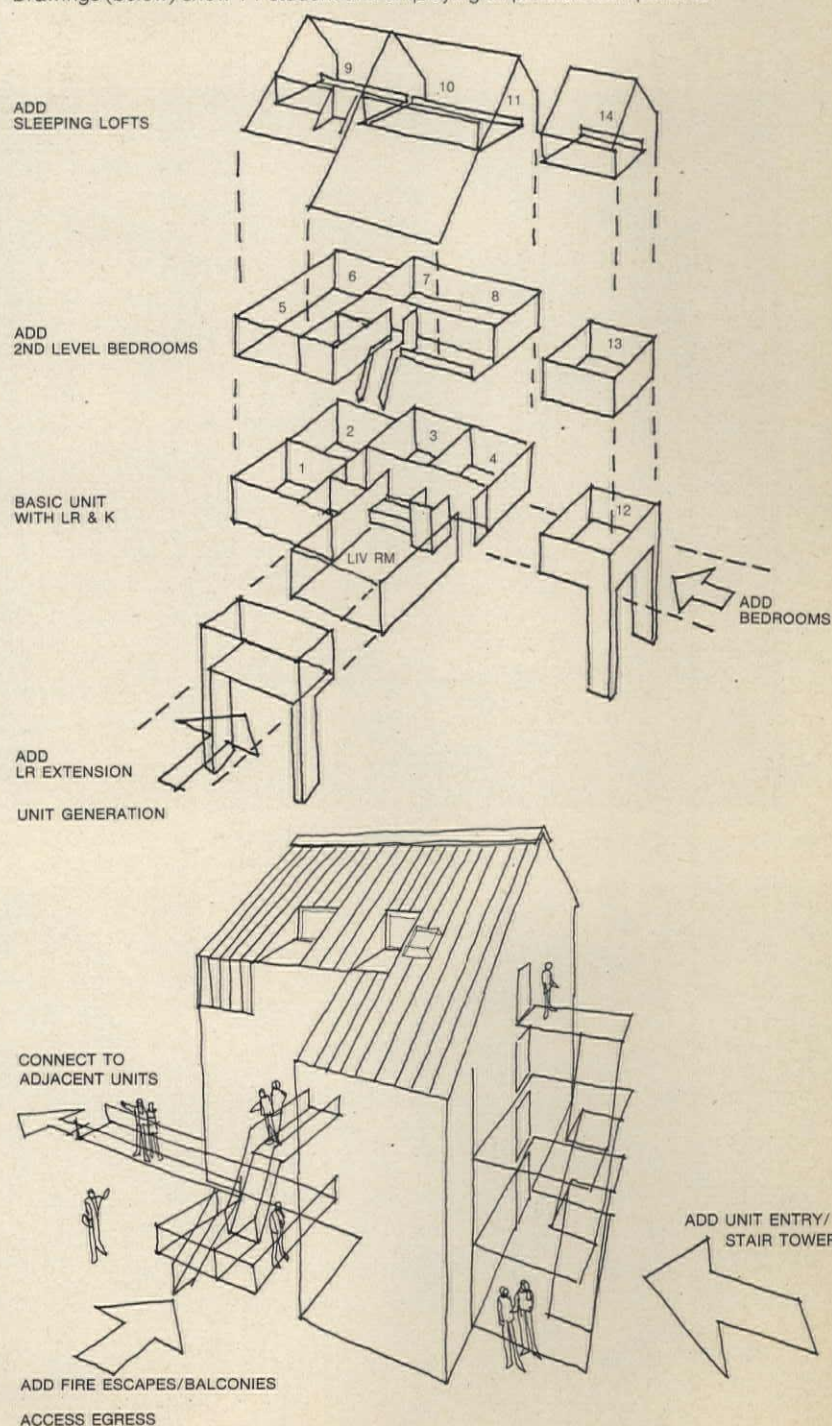
Worcester State College is not a dream campus. For the most part, the institutional-looking red brick buildings, set in a largely treeless landscape, give the school somewhat the appearance of a 20-year-old state hospital. Chandler Village, on the other hand, is nestled snugly into the dense woods; it seems almost not to belong there. But the fact that it is there is important; it shows not so much how far we've come in thinking about how students ought to live, but how far we've come simply in our concern for other people, for what they need and what they want. The Massachusetts State College Building Authority and the school,



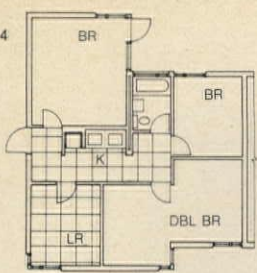
TYPICAL SECTIONS

Building types (above) provide living accommodations ranging from the single room to a 14-student collective (plans on following page).

Drawings (below) show 14-student unit employing all possible components.

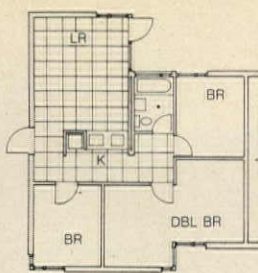


UNIT TYPE 4



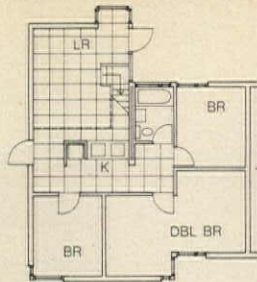
LEVEL 1

← INTENSELY PRIVATE →



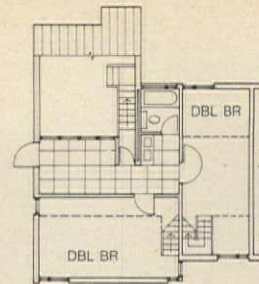
LEVEL 2

← SMALL GROUP →

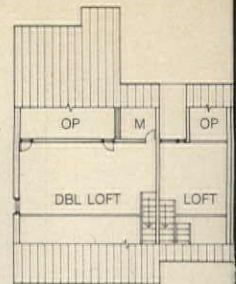


LEVEL 3

← COMMUNAL COLLECTIVE 11 STUDENTS →

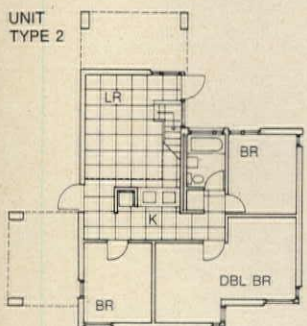


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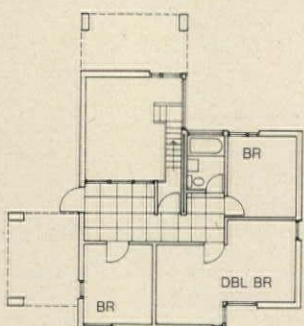
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UNIT TYPE 2

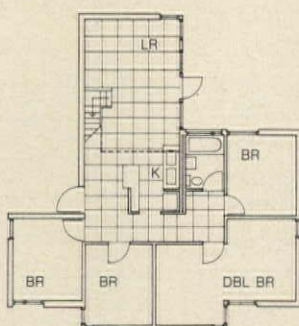


LEVEL 1

← LARGE GROUP 8 STUDENTS →

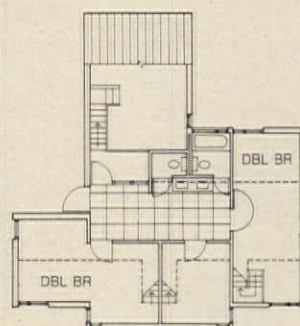


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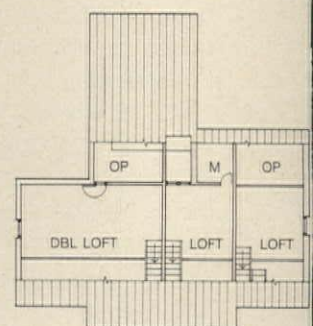


LEVEL 3

← COMMUNAL COLLECTIVE 14 STUDENTS →



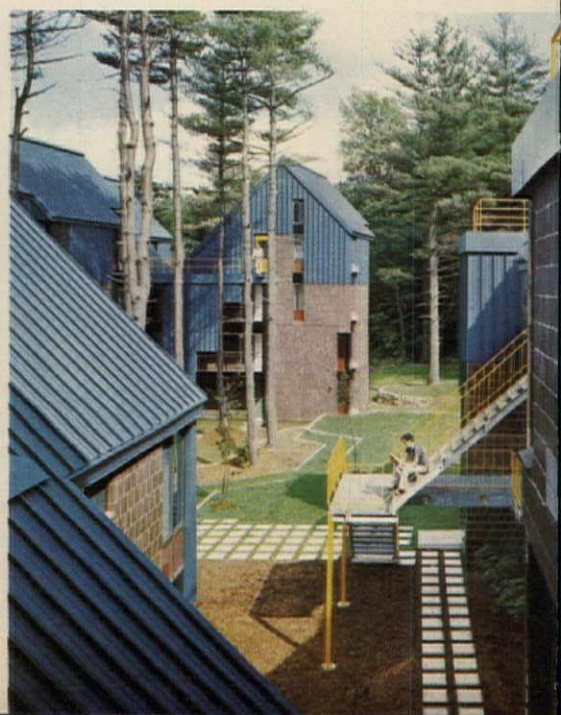
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LEVEL 5

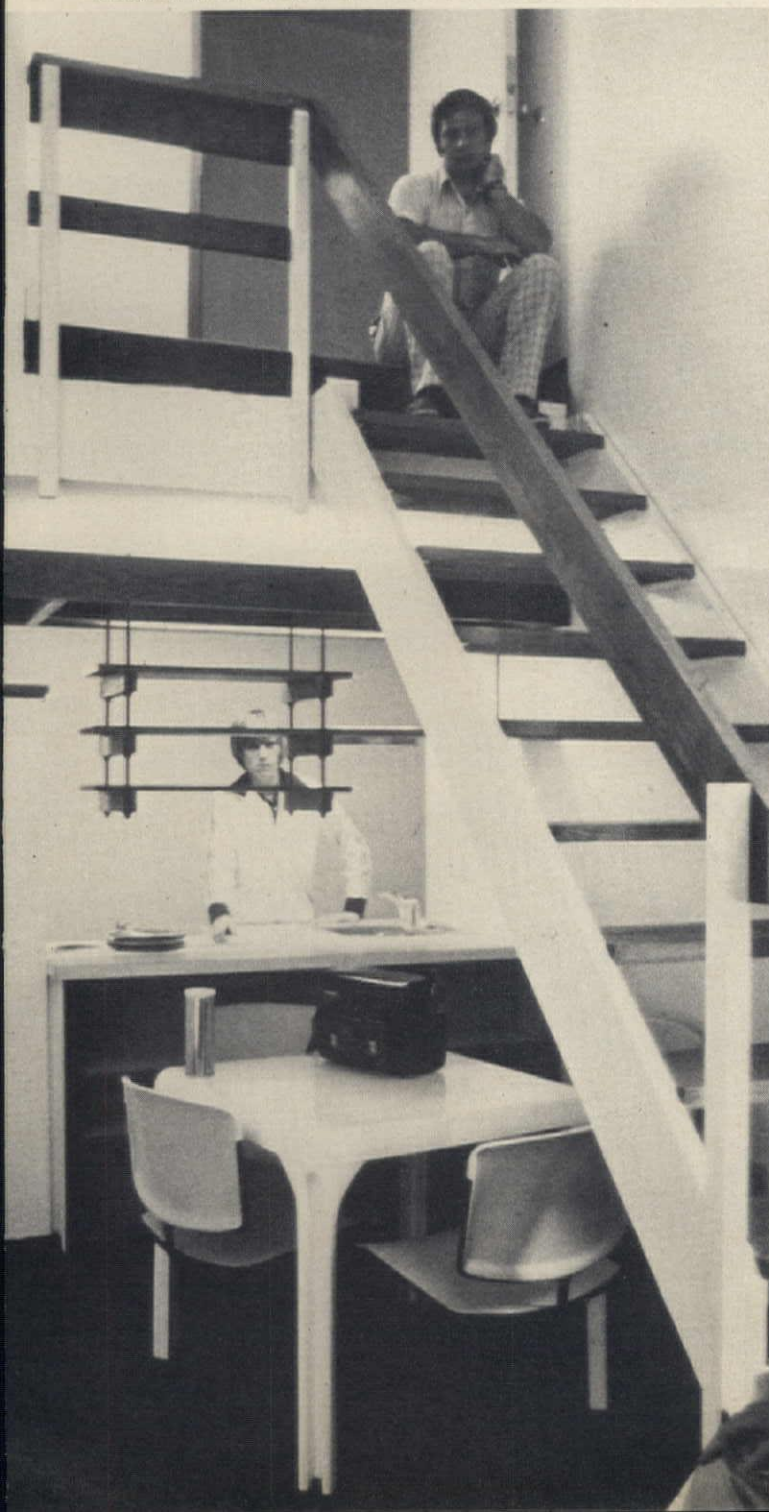


The steel-frame, brick- and aluminum-faced houses of Chandler Village are clustered along a curving, terraced road set deep into the woods.





Living rooms, kitchens, and dining areas are included in all units except the private rooms; open stairs connect levels in duplex units.



Chandler Village, Worcester State College

who built the village, took a chance, however. This was, after all, a commuter college, and there was no iron-clad guarantee, even with the intense user participation in the design of the buildings, that students would rush to live in them. Consequently, the clients required the architects to design the buildings for construction on a very tight budget so that the apartments could be rented at the going market rate to private outside individuals if the students, for whatever reason, did not take to them. The apartments, however, were immediately taken by the students, and continue to be immensely popular with them.

The only problems that have come about have been with the 11- and 14-student communal collectives. The students do not especially care for them, and generally try to avoid living in them in the first place; or if unable to do that, they move elsewhere as soon as possible. The school maintenance crew reports that these units are the most difficult to maintain, and take much more end-of-year refurbishing than any of the other units. This probably has to do with a lack of identity with the space, which may not have been foreseen in the planning and design stages. It is possible that 11 or 14 people are just too many to share an apartment; if space becomes too public it then becomes nobody's responsibility, with a corresponding decline of personal interest in it. Another problem, much more serious, has recently come from the local fire marshal's office. It has declared that the lofts under the pitched roofs of each building can no longer be used for sleeping. This means that those who slept there must now move to the floor below. To make room for the additional beds, all desks and wardrobes must be put in the lofts. The spaces there were not designed for such an arrangement, and it does not work. This is not too bad in some of the smaller units, but in the larger communal collectives it has made the least desirable situation less desirable.

Even with these problems, though, Chandler Village still has its appeal. In its genesis and in its design it breaks new ground. As an experiment it has not been 100 percent effective, but then few experiments are, the first time. The problem with applying the scientific method to architecture is that the product is a building, and not a theory on paper that can be easily changed. [David Morton]

Data

Project: Chandler Village (student residences), Worcester State College, Worcester, Mass.

Architects: Arrowstreet (formerly Ashley-Myer-Smith); Douglas Cole Smith, project director; Tyrus Porter, project managers; Robert Slattery, John R. Myer, co-designers; Gary Hack, programming.

Program: dormitories for 500 male and female students.

Site: the 26 houses of the village are clustered along a terraced street in the woods at one end of the campus.

Structural system: concrete spread footings; steel frame.

Mechanical system: window air conditioning units; through-wall heating and cooling units in each living room.

Major materials: concrete foundation; steel frame; steel stud, brick, and zip-rib aluminum walls; joists, metal pan concrete floors; zip-rib aluminum roof. For detailed listing see Building materials, p. 92.

Consultants: Morice and Gary, landscape; Shooshanian Engineering, mechanical; Souza and True, structural; Vern Norman Associates.

Client: Mass. State College Building Authority; Worcester State College.

Costs: \$3,675,000 including landscaping; \$32.50 per sq ft.

Photography: Nick Wheeler, except p. 41, courtesy of the architects.

Rust City

Caudill Rowlett Scott's systems-built housing at the Brockport campus, State University of New York, offers accommodations that are low in cost, high in demand.

They have a look about them all right. When the dormitory apartments were finished last year, some students at S.U.N.Y.'s Brockport campus found the streaky, harsh orangish color of the weathering steel boxes a little hard to take. But as the low-rise buildings have weathered to a rich brown patina, that objection has diminished. The apartments are the highest in demand of any form of housing on this upstate New York campus. So much so, that reasonably rigid admission requirements are imposed on prospective tenants.

And small wonder. This villagelike complex sits on the edge of a rather desolate campus spread across a treeless plain that is interrupted only by a railroad track slashing through its middle. Whereas the other campus buildings are spaced monotonously far apart awaiting future college expansion, this cluster of 27 buildings arranged around a meandering walk, punctuated by an outdoor amphitheater and commons building, forms a sense of place. If Brockport's campus architecture is characterized by competent, at best—or just plain dreary, at worst—brick and concrete buildings, and needlessly high-rise dormitories, these low-scale weathering steel structures offer a distinct architectural character. The students call the complex Rust City—but they don't mean it derogatorily.

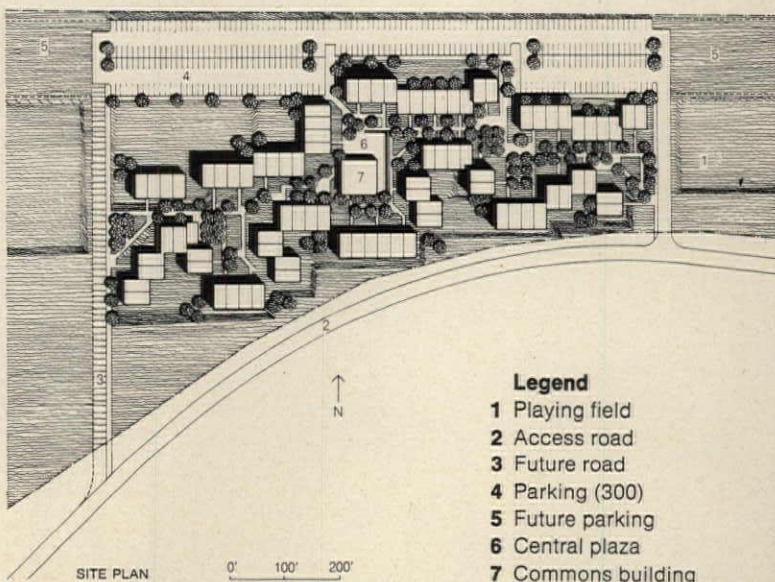
The buildings came about through several unique circumstances. The Brockport college is part of the State University of New York that enlists a public benefit corporation (the state's Dormitory Authority) to build its residence and dining halls. About five years ago, S.U.N.Y. decided it could no longer build student housing because of the rising construction costs (up to \$10,000 per student) and the popularity of off-campus housing. Not too many of the system's 27 campuses had an immediate problem, but Brockport did, with at least 5000 of its 8000 students living in decrepit housing in the town (pop. 8000).

The agencies came up with an idea not tried before in New York. Following the example set by the University of Vermont, they decided on a design-build competition in

which architects, in order to compete would have to team up with contractors. Furthermore, they established a fixed price as the University of Vermont had done, so that they could judge entries on quality alone, without feeling obligated to select the lowest bidder. Of course their fixed price was a challenge to any architect: \$5825 per student.

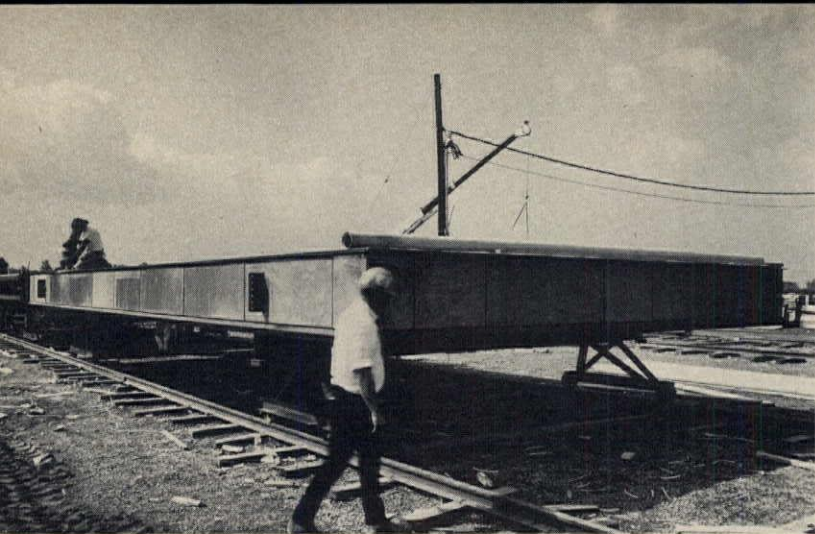
Before the competition was begun, the agencies hired Montreal architect Philip Bobrow (who had drawn up Vermont's program) to compile an outline of space and technical performance requirements (acoustics, structure, HVAC). He also devised a detailed evaluation matrix for the jury's use in selecting the winning scheme. For example, the evaluation criteria (based on technical, functional, and aesthetic standards) was applied on five different levels—from the site to the architecture, to unit design, to space arrangement, and then to equipment and furnishings. Jurors voted according to a weighted point system. In order to ensure that the scheme would satisfy its users, Brockport students (and administrators) participated in the judging.

Caudill Rowlett Scott, architects for some of the campus buildings and Brockport's new master plan, won. They topped five finalists with the only industrialized building scheme among them, and one of the few low-rise solutions.

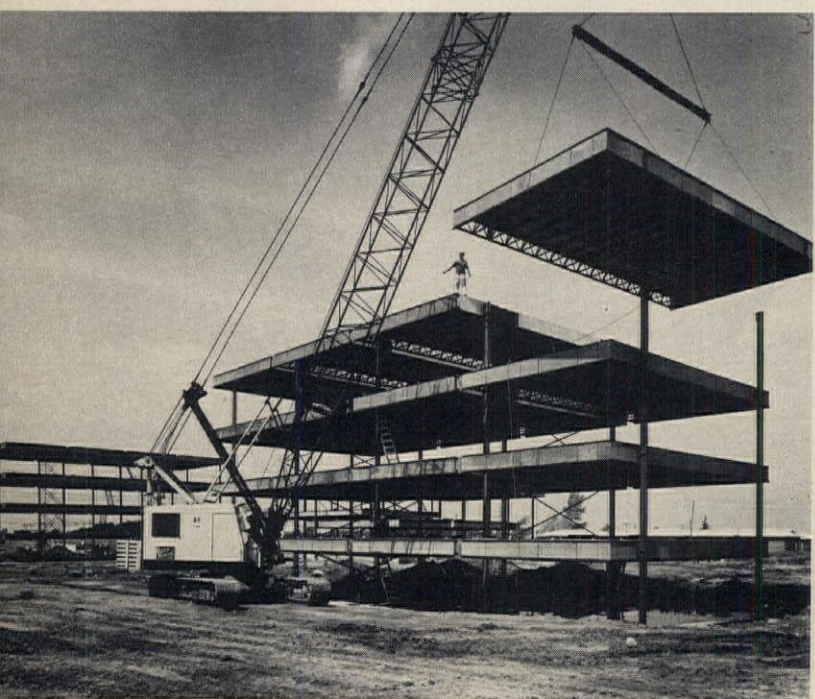
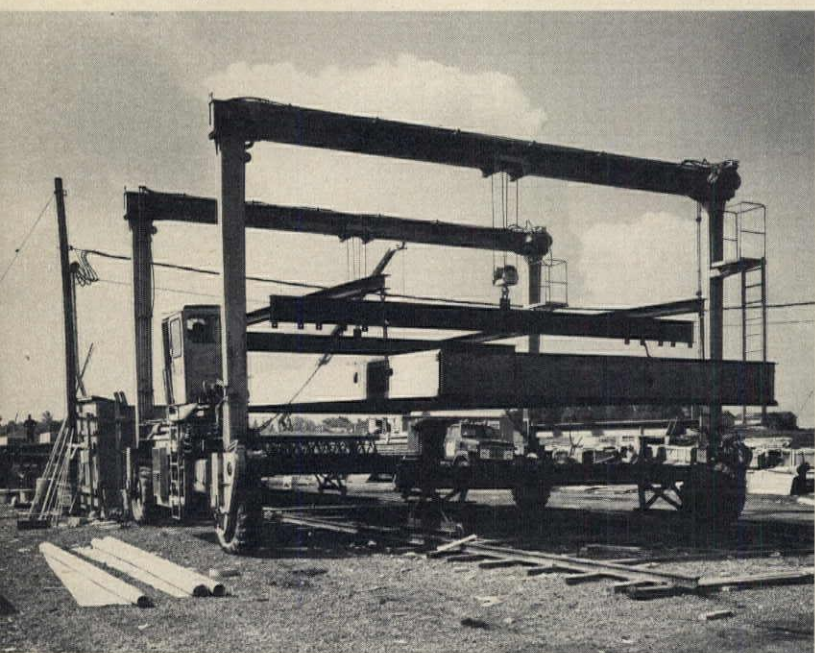


Housing faces inward (right) onto pedestrian paths and plazas. Although weathering steel panels were used in the building system, architects paved many of the public places with brick to relate to other campus construction. Window frames are aluminum factory-finished to a dark bronze color to blend in with the deep brown patina of weathering steel. Timber outdoor furniture (below) was designed by M. Paul Friedberg & Associates.

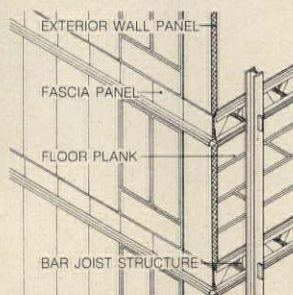




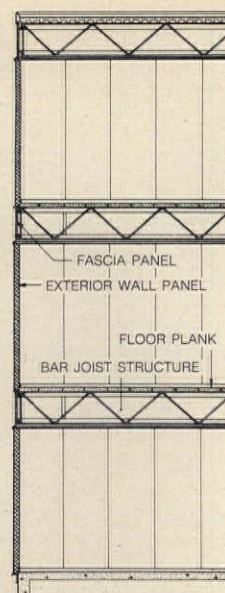
On a nearby warehouse site, the 800-sq-ft trays were assembled, including truss frames, reinforced gypsum floor planks, spandrels, curtain wall fittings, wiring for electric resistance heating, and plumbing (above). Then the trays were trucked to the dorm site (below) and hoisted into place by crane (bottom). Panels (weathering steel on the exterior, vinyl on the interior) could then be installed without scaffolding. Ceilings are vermiculite tile.



Brockport College apartments



SYSTEM CONSTRUCTION

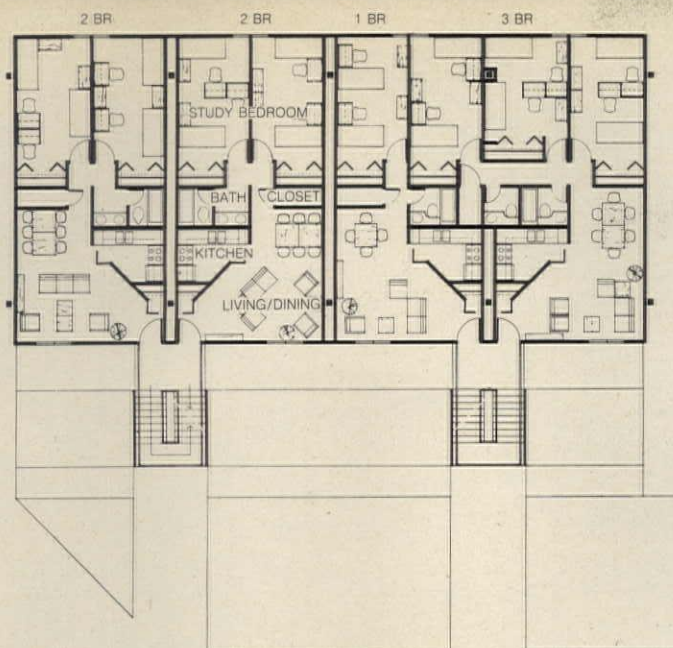


Under the guidance of Jonathan King, CRS Senior Vice President in charge of systems building, the firm had selected a French industrialized system, Systems III, which had been used only once before in the U.S., for a Chicago housing project. Systems III had evolved from one that French architects Lods, Depondt & Beauclair had devised for a housing project in Rouen. When the Rouen system won the Reynolds Memorial Award in 1970 (*P/A*, July 1970, p. 27), it was spotted by jury member William Caudill of CRS. Since the franchise for the system was held in the U.S. by the Chicago firm of Component Buildings Systems Ltd., CRS joined them, along with contractor W.E. O'Neil, also of Chicago, to enter the competition.

Resorting to a factory-assembled type of construction made sense to King for a number of reasons. Labor in Brockport was scarce, and could be high in price. Poured-in-place concrete was hard to come by, and there was only one desirable precast concrete company in the area. It was already working with an architect in the competition.

The French system features a steel frame bolted together on site. At Brockport, columns were first installed, then 800-sq-ft steel floor trays allowing clear spans (20'x40') were lifted into place. The construction crew attached truss frames, spandrels, gypsum board floor planks, curtain wall fittings, and plumbing and electrical wiring to the trays before they were put in place. A major convenience of the system is that exterior cladding can be mounted from within the structure, without the need for scaffolding. In the case of the Brockport project, the architects used a sandwich panel of weathering steel for the exterior and vinyl for the interior—the first time weathering steel was used for this building system. (CRS selected it not only for its low maintenance requirements, but also for the close color affinity to brick. Brick, a predominant material in the rest of the campus, proved to be uneconomical for the French system.)

The architects were able to shave costs considerably by not installing lobbies, elevators, or interior stairs. Circulation for the two- to four-story buildings was simply reduced to partly covered exterior stairs and balustrades connecting upper level apartments. To keep from running stairs more than three stories, CRS bermed up the "street level" so that the four-level buildings could be dropped slightly below grade. A scooped-out cavity between the unit and berm

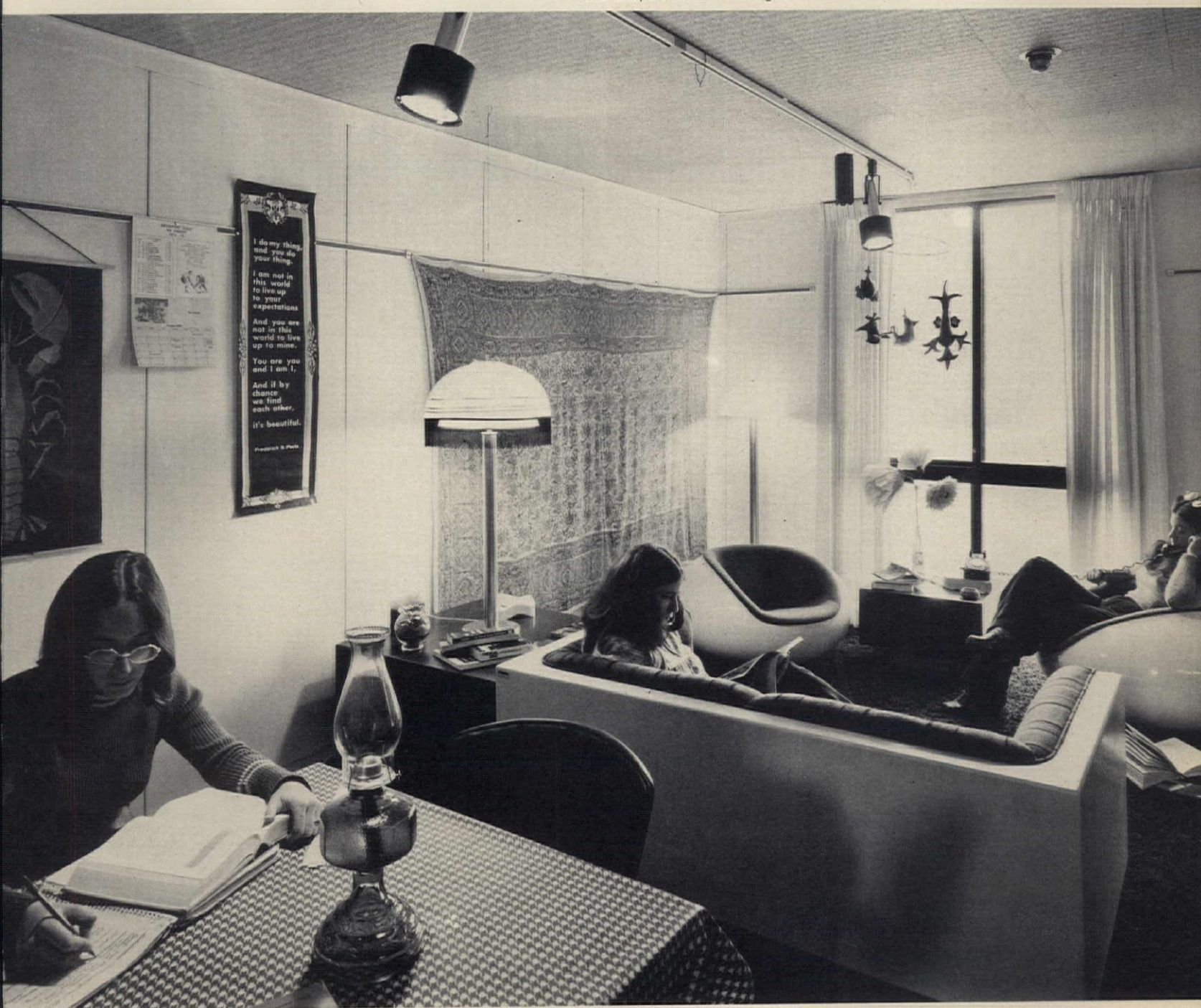


FLOOR PLAN

0 15'



Two-bedroom apartments for four students are most common unit type; twelve apartments are designed to accommodate handicapped students.



Brockport College apartments

permits natural light to enter apartments without sacrificing tenants' privacy.

Most of the apartments are two-bedroom units (four students)—the ideal arrangement for the 20' x 40' module of the steel tray. However, 25 one-bedroom and 25 three-bedroom units were assembled by combining two trays and borrowing spaces from one. This conversion can easily take place by fireproofing the column between the trays, removing the demountable partitions, and relocating a closet. Baths (one for a two-bedroom unit) and kitchens are the only spaces that are fixed.

Students go to a separate building for mail, refreshments and laundry. In this 2350-sq-ft center, the only nonsystems building, a steel space-frame roof hovers over a double-height lounge. A mezzanine level for students' mailboxes can be entered from the street, while the lounge floor below is reached from the lower amphitheater/plaza level (actually at natural grade) surrounding the center. Two other smaller lounges for laundry and vending machines were erected with the French system for smaller plazas.

Campus administrator Robert Denning, responsible for the planning and development of the dormitories, observes that the students seem particularly enthusiastic over the small village concept. The privacy and freedom (and, of course, that old college dictum, "responsibility") afforded by the housing has elicited respect for the property and a sense of community. A self-governing tenants' board and resident students oversee routine operations and keep watch over problem situations. To "admit" students to the housing, the tenants' board requires that they have maintained a certain grade level, and have lived in at least one other form of campus housing; the board also prefers that new tenants move in with existing ones. Supposedly, students may be evicted from the housing for misdemeanors (such as defacing the property). But one dorm counselor reports the situation in a different light. While it may be relatively difficult to get into the housing, it is not that easy to get offending students out. For example, if one of four roommates creates a problem (e.g., drug dealing) that bothers the other three, more likely than not the three roommates end up leaving, due to reluctant administrators, sticky students' rights issues, etc.

At any rate, it would seem that architecture has little ef-



fect on curing social ills. But it may, as in the case of Brockport, perpetuate certain traditional educational values and respect for property (for some students). It apparently does so with more success than an impersonal institutional environment. [Suzanne Stephens]

Data

Project: Student apartments ("Stage 16"), State University College of Brockport, Brockport, N.Y.

Architects: Caudill Rowlett Scott of New York, Houston, and Beirut. Jonathan King, partner-in-charge; Frederick Preiss, design; Joseph J. Scarano and Charles Baskett, project managers; Thomas Bean, architect in charge of technology.

Program: to design/build 250 student apartments with laundry and lounge facilities for 1000 students, by architect-contractor collaboration for a budget not to exceed \$5825 per student.

Site: a 2-acre site on the edge of the Brockport College campus.

Structural system: proprietary industrialized buildings system (see text).

Mechanical system: electric resistance heating.

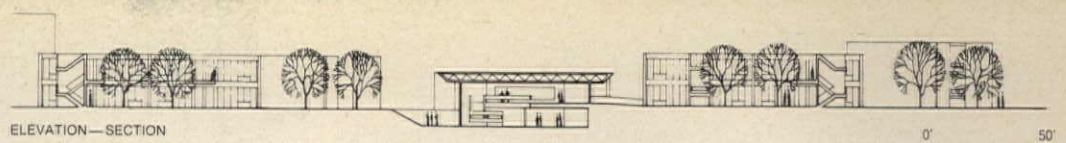
Major materials: weathering aluminum window/frames, concrete foundations, vinyl interior wall surfaces, gypsum board high-density floor planks, vermiculite tile ceiling. (See materials list p. 92)

Consultants (design/build team members): M. Paul Friedberg Associates, N.Y., landscape architects; The Engineers Collaborative, Chicago, Ill., mechanical consultants; W.E. O'Neil Construction Company, Chicago, general contractor; Component Building Systems Ltd., Chicago, systems developer.

Client: The New York State Dormitory Authority (Douglas Hasbrouck, construction director); S.U.N.Y. Brockport College (Robert Denning, assistant to President for Planning and Development, now Assistant Vice President for Student Life).

Costs: \$20.54 per sq ft.

Photography: Otto Baitz, except p. 44, James Brett.



The commons hall (left) is the only nonsystems structure in the complex. Glazed on three sides, the hall can be entered on the mezzanine level from the street, or from the depressed plaza/amphitheater. Architects actually bermed up the pedestrian street level (elevation-section above) to place four-story buildings half-level down, and still permit apartments natural light. The commons hall's plaza, therefore, sits at natural grade, while its upper level mezzanine is entered from the bermed up street grade. Concrete columns and space frame roof (opposite) provide basic structure. Exterior walls are sheathed in weathering steel to blend with surrounding apartments. The plaza/amphitheater is tiled in brick (below) with timber railroad ties used for steps and seating leading down to the plaza.



Berkeley bravado

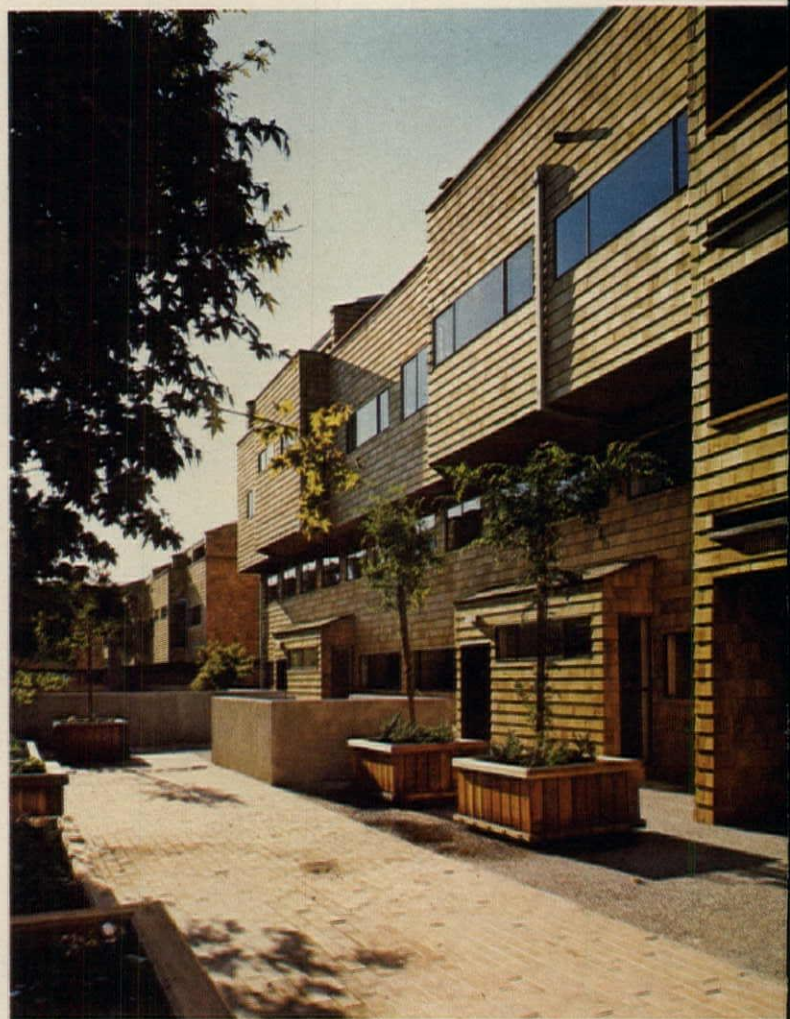
An early example of student participation and ownership shows how a variety of apartment units and single bedrooms can be achieved in housing.

Few buildings reflect student experience with housing as closely as Rochdale Village, the South Campus Housing Project of Berkeley's University Student Cooperative Association. During the decade preceding its construction in 1970-71, the character of student housing began to change drastically. Many of the old, roomy, wood-shingled, converted boarding houses that gave the area south of the campus its distinctive character were torn down. Stuccoed apartment houses that the students dubbed "L.A. tacky-tacky" replaced them while the University built high-rise dorms of a similar character in concrete. In the view of many students, housing, though rising, was definitely going down hill.

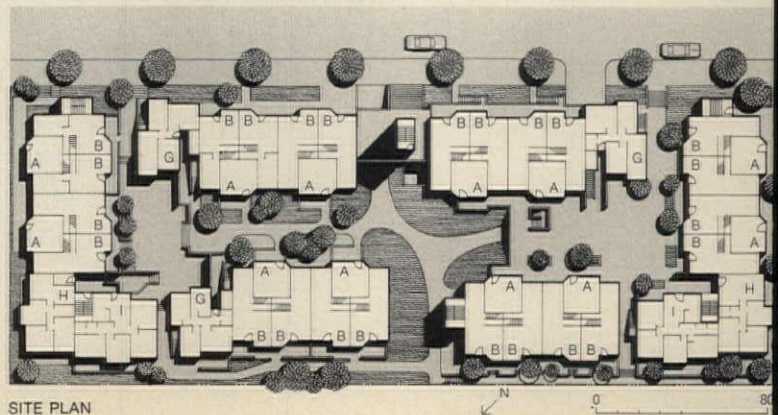
Although the individual student was powerless to change matters, the Student Cooperative Association, established in 1933, and by now the largest in the country, could. The Board of Directors determined that the new facility funded by HUD's College Housing Finance program would be different. From the beginning, a Co-op committee that ranged in size from 5 to 15 members worked out the program with architects Ratcliff, Slama & Cadwalader. Some of the committee members were Upper Division or Graduate students—the level for which the housing was intended—who would have an opportunity to live there; some were graduating. But all were deeply concerned that their experience and insights be recorded and used. Although somewhat apprehensive in the beginning about the size of the committee and the intensity of its commitment, the architects report that the whole experience was one of the most rewarding of their career and that the student input contributed substantially and positively to the design.

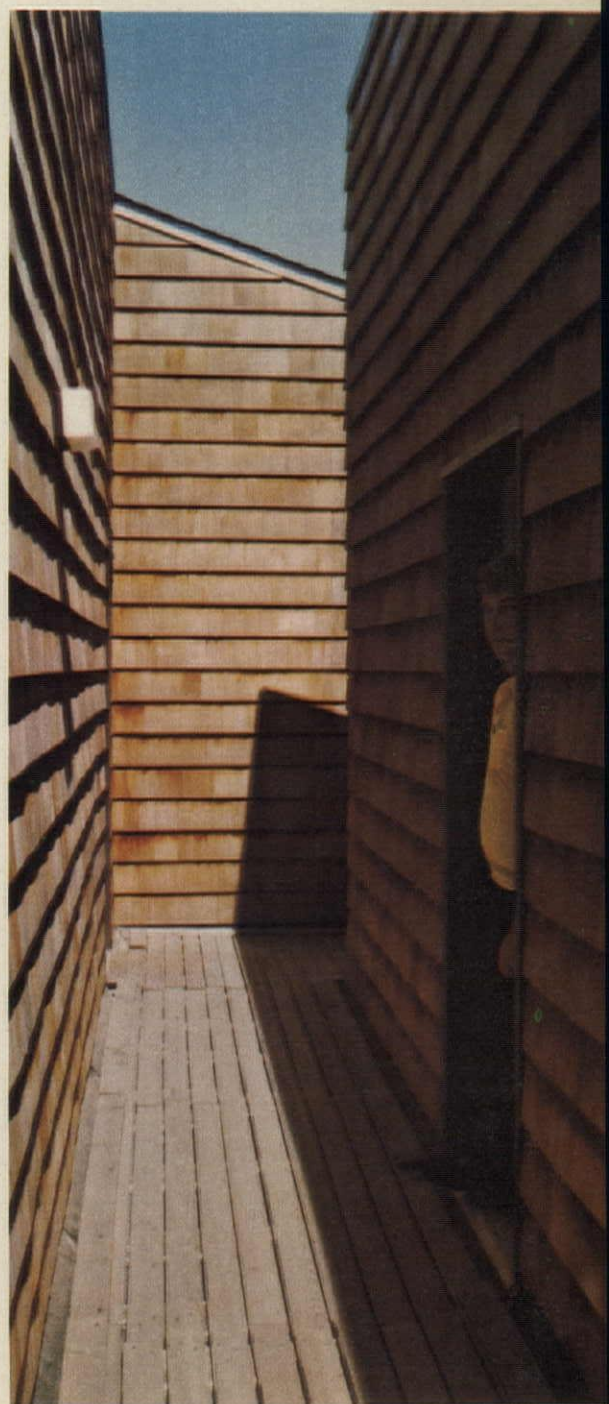
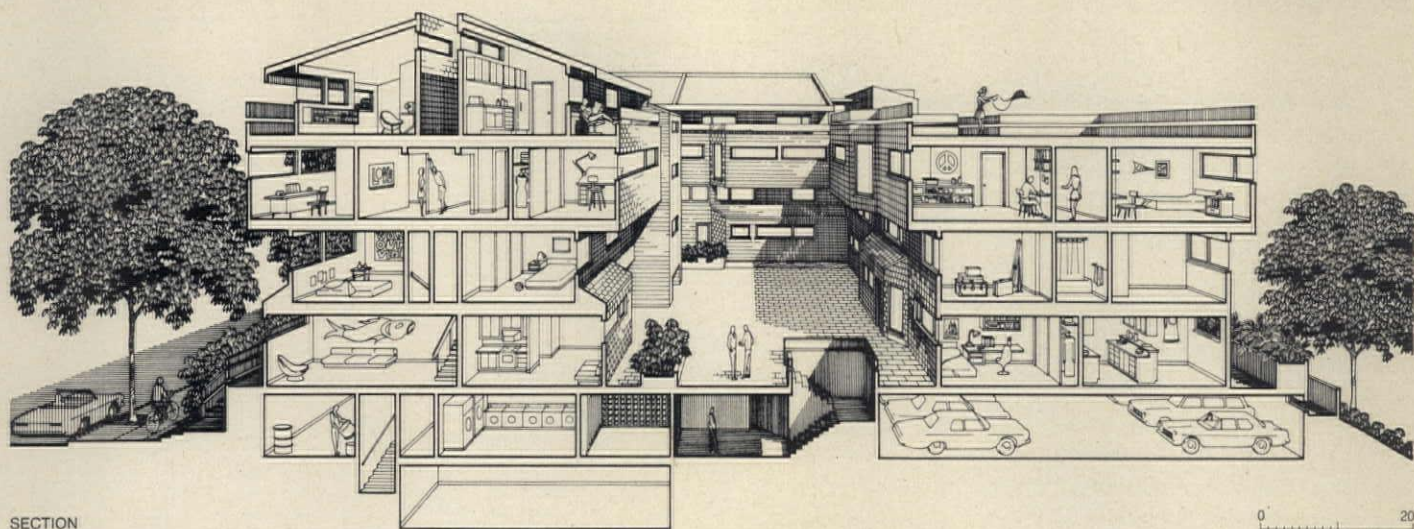
The 1.1-acre site is a block west of Telegraph Ave. on Haste St.; in the corresponding block east of Telegraph Ave. was the infamous People's Park. Prior to, during, and after construction of the project, feelings on the "Avenue" were running high, to say the least. Two arson attempts plus infusions of tear gas testified to the tumult of the times.

In spite of this, the students were adamantly opposed to



Courtyard views above and opposite bottom.





One of the most spatially interesting areas is the penthouse floor (above) where narrow circulation passages around the units create a street scene on the roof.

Rochdale Village

having a monolithic, elevated building with a single entrance and security control. They specifically requested a residentially scaled, wood-shingled building with as great a variety of spaces as possible, recapturing the image of south Berkeley that they had come to love and revere.

The University, from whom the land was leased for 40 years, specified a density of 250 units per acre, making it difficult to satisfy the students' requirements without packing the site with buildings. The solution was to push the building envelope to the lot lines, providing six narrow slots to give access to an interior court. Far from being the usual dreary light well, this restricted space is so subtly varied in size and shape that it offers a sense of intimacy rather than confinement.

The shingle skin of the complex accentuates its faceted form, combining liveliness with rightness of scale to create that most sought-after of college residence images, the village. Fortunately, the other half of the block to the south is occupied by a city park from which the project gains a valuable breathing space.

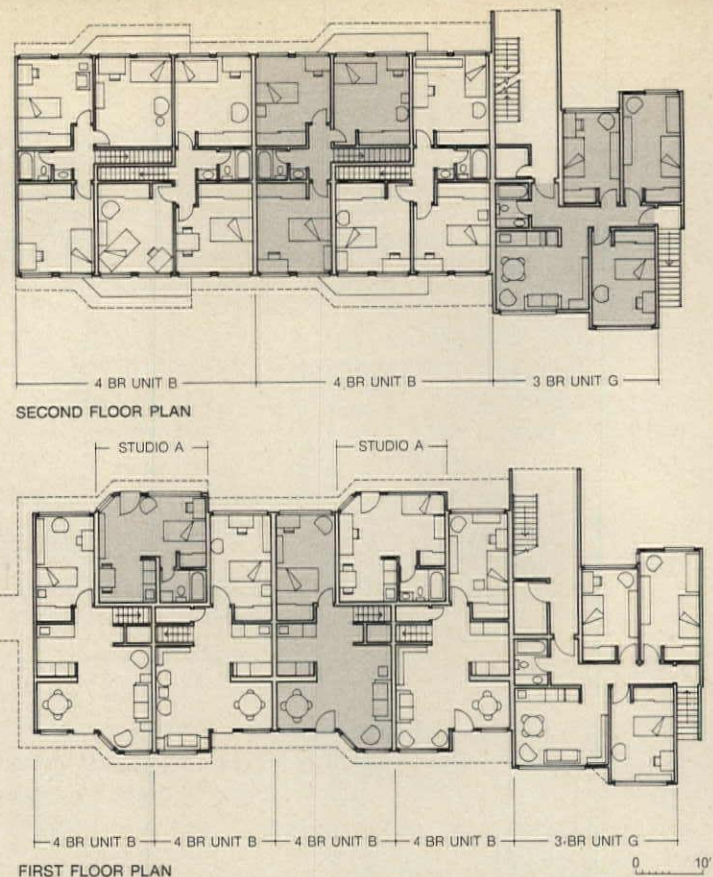
Security concerns, so pressing at first that the residents organized a patrol, have diminished, because the project is relatively free from incident. The "eyes on the courtyard" adequately supervise the traffic to and from the entrances to individual units. Ratcliff reports that, while working to achieve this visual control, they also increased the residents' privacy by fenestrating the court so that few window sight lines directly intersect.

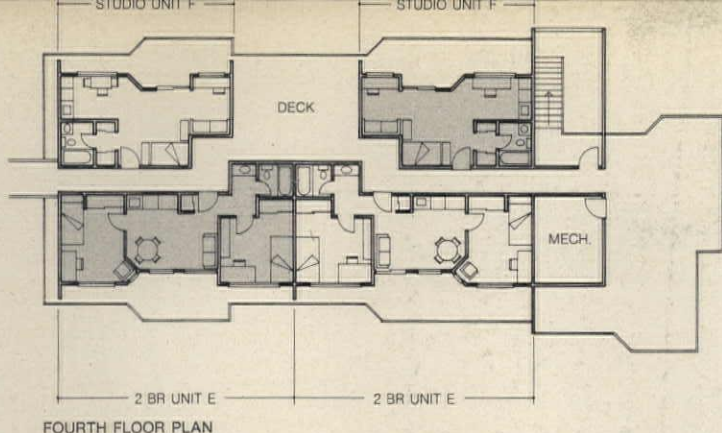
The committee was as concerned about the internal arrangements of the building as they were about its exterior form. The basic policy was to provide each student with a private room either in a studio apartment or grouped in an apartmentlike configuration. In both situations, cooking facilities are within the area. In this decision, worked out between the committee and the architects, the really significant innovation of Rochdale emerged. In contrast to the routine two-person rooms, gang toilets, and central dining, Rochdale provides privacy and living space in a variety of apartment types.

Since the rent decreases as the number of occupants per apartment increases, the most popular unit is the two-story townhouse with three bedrooms on the second floor and one on the first with the kitchen, dining, and living areas. Townhouses alternate with studio units on the first floor while three-bedroom units occur at the ends of the buildings on the first, second, and third floors. Two-bedroom apartments occur on the third and fourth (penthouse floors) where they alternate with studio units.

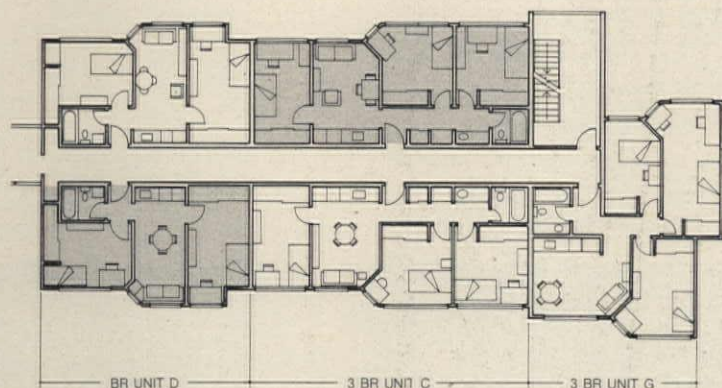
The U.S.C.A. provides units with basic furniture—table, chairs, desks, lamps, and a boxed plywood platform with foam mattress for a single bed. All furniture is unpainted, but paint is furnished for those who wish to paint furniture and/or walls of their unit. Tools are provided for repairs and alterations that will not change the structure of the unit (right above).

One standard design element rejected by the students was the window wall. Windows are positioned near the top of the wall except for the sides of bays where the students felt they would like the view from floor to ceiling level (right).

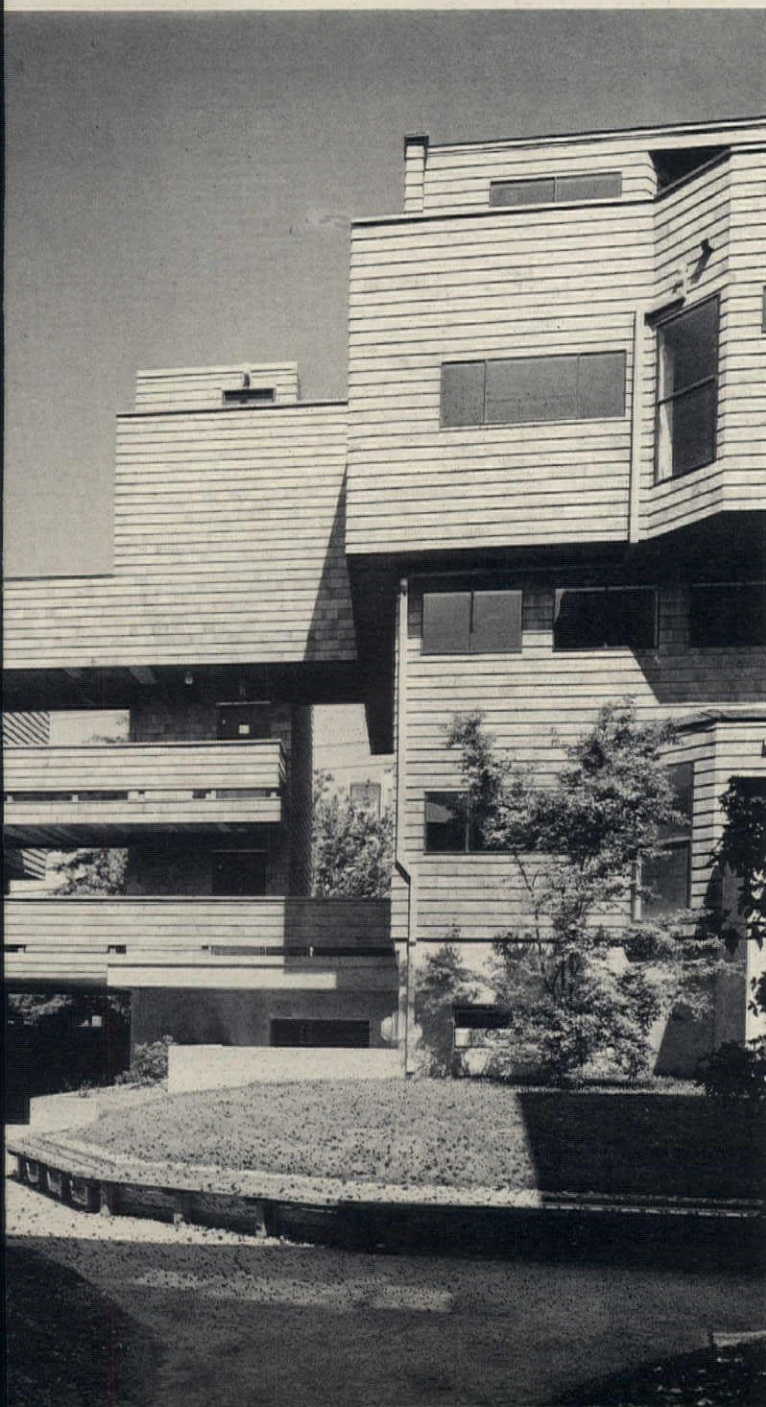




FOURTH FLOOR PLAN



THIRD FLOOR PLAN



To the architects' surprise the students did not favor the usual arrangement of relatively small bedrooms and a large common room. Instead, they saw the bedrooms as combination sitting rooms (many viewed a bed as a space-eating piece of furniture and preferred a mattress on the floor) and the common space as a receiving, dining, and living area. The only complaint after four years of operation is that the eating space and kitchen storage in the large units is tiny.

In addition to the high level of thoughtful concern, the students showed an unusual willingness to pay for their standards. It cost \$85,000 to have wood shingles in place of the unwanted stucco. Increased construction costs for a 3 in. concrete slab and staggered-stud, insulated walls were the result of their demand for adequate soundproofing. A budget of \$15,000 was allocated for exotic plant materials, such as Japanese maples and rhododendrons. It has all paid off. There is a waiting list of about 150 to get into the Village during the fall, winter, and spring quarters. Even in summer, there is 80 percent occupancy.

Rochdale Village clearly holds a very special lesson for everyone concerned with the now well-established demands for participation in design. Working together in close cooperation, the architects and their student clients have constructed a splendidly tuned living environment; one that handsomely responds to both its physical and social setting and to the abstract concerns of architecture.

[Sally Woodbridge]

Data

Project: Rochdale Village, University of California, Berkeley.

Architect: Ratcliff, Slama & Cadwalader; project architect, Syed Husaim.

Client: University Students Cooperative Association.

Program: to provide 97 one-, two-, three-, and four-bedroom apartments with single occupancy bedrooms for 264 students plus parking and common use area. Lower two floors contain first floor studios and two types of two-story, four-bedroom townhouses; Two- and three-bedroom apartments occupy third floor; two types of two-bedroom penthouses and studios are on fourth floor.

Site: 1.1 acres adjacent to commercial area, slight uniform slope.

Structural system: wood frame, bearing walls over reinforced concrete parking structure.

Major materials: cedar shingles and composition roof shingles; sand-blasted natural concrete at parking level; gypsum board and wood trim interior.

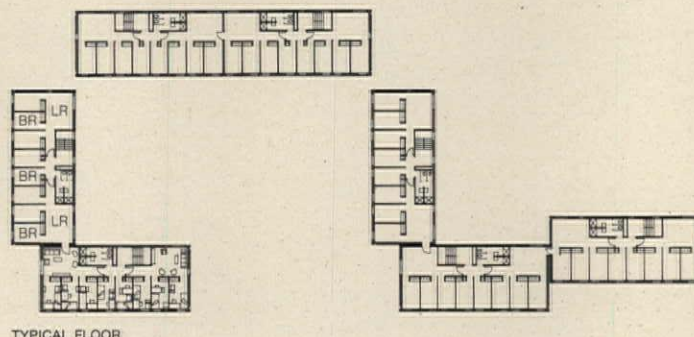
Mechanical system: hot water baseboard convection units, individually controlled.

Cost: \$2,025,000 (\$19.52 per sq ft) at ENR 1515.

Consultants: Alan R. McKay & Associates, structural; I. Ali & Associates, mechanical; Darmsted, Parenti & Associates, electrical.

Photography: Joshua Freiwald except p. 49, Rob Super.

In Harvard's Yard



TYPICAL FLOOR

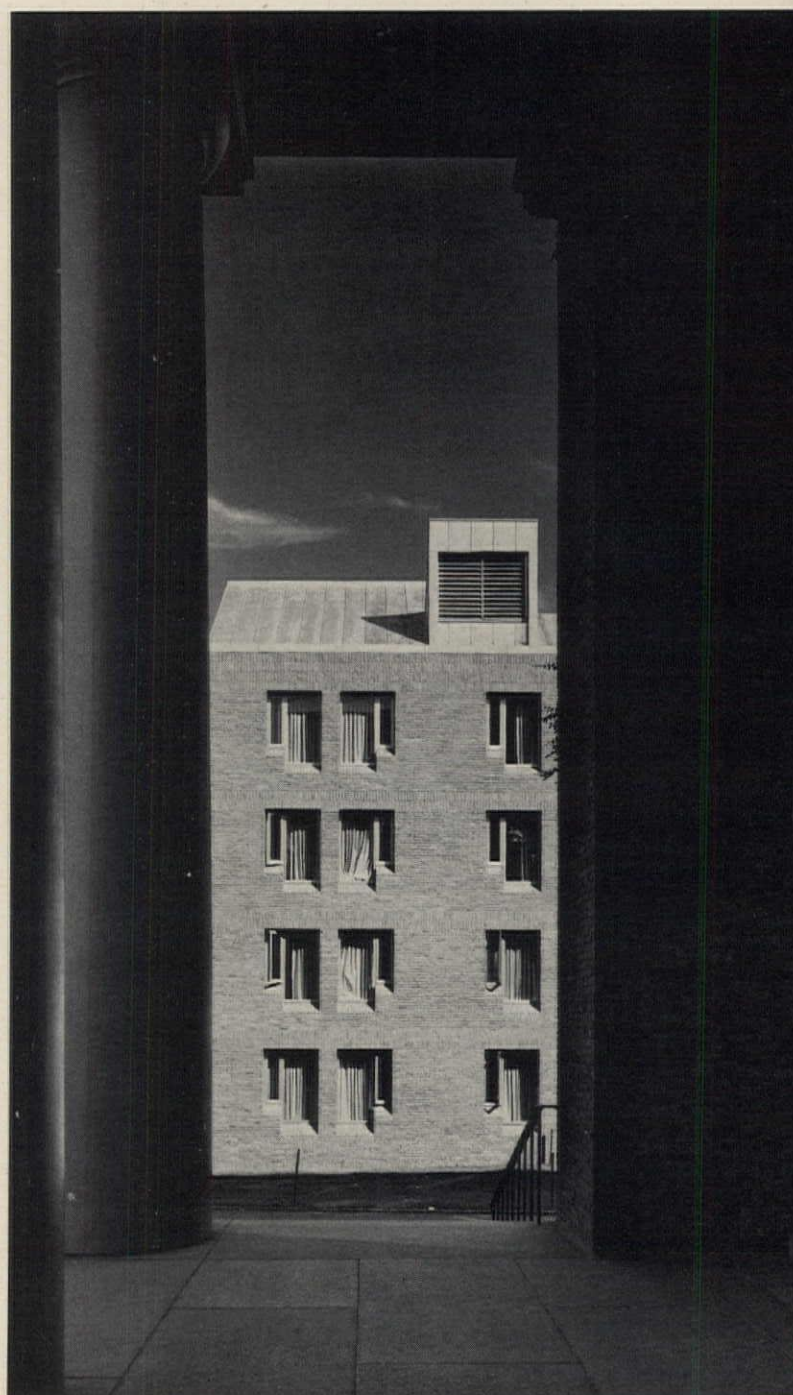
The new freshman residence halls at Harvard came with some rigid controls for the architects; how they managed to deal with them is a story in itself.

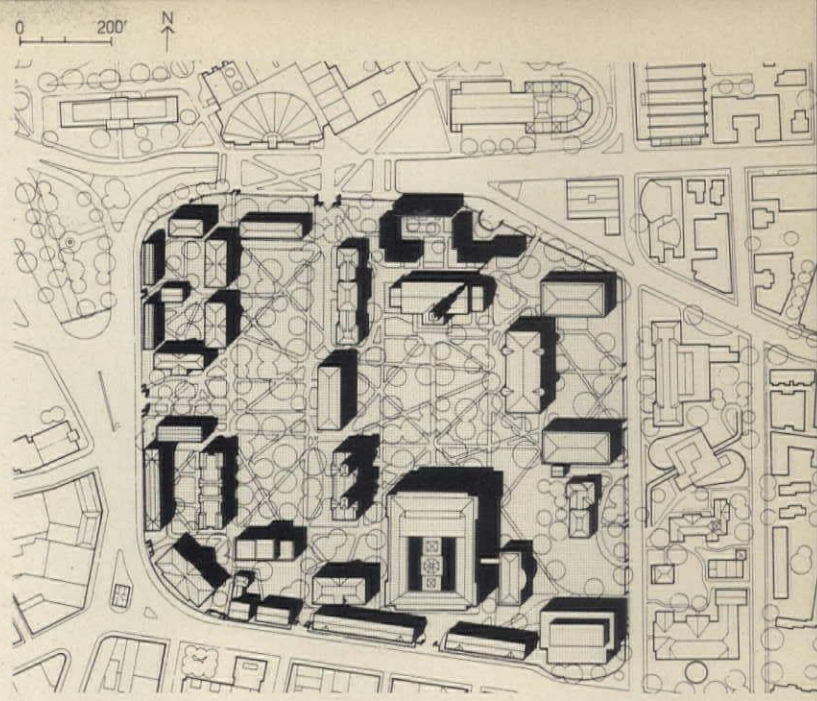
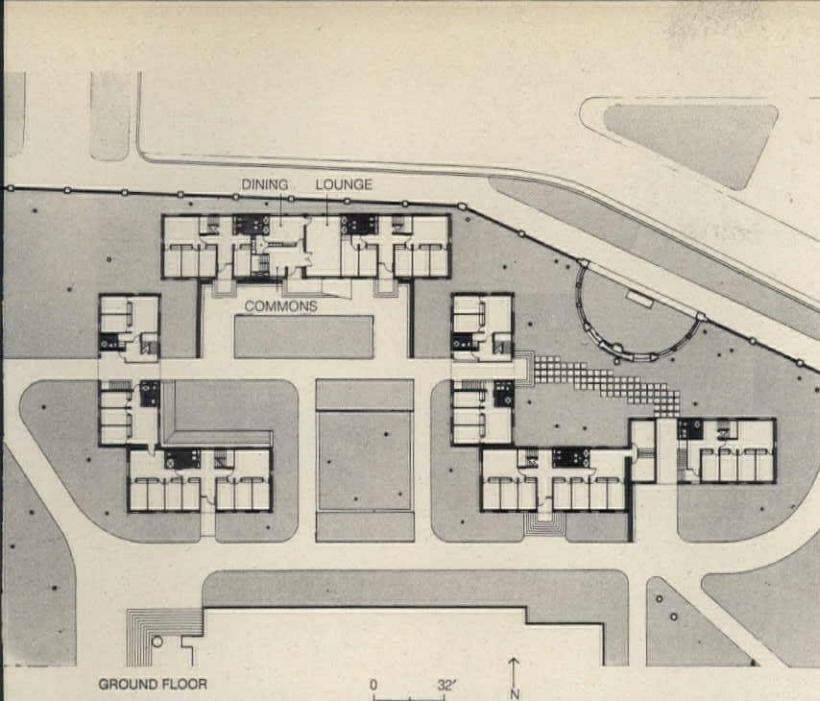
The seven buildings of Harvard's new Canaday Hall freshman dormitories by Ezra D. Ehrenkrantz & Associates are neither programmatically, technically, nor functionally innovative. They are not sufficiently high in spectacular design content for acclaim in the pages of architectural journals. The design of the buildings did not call for much student/user participation (the basic freshman living pattern at Harvard has been well established for over 300 years; housing all freshmen equally in single-room dormitories in the Yard is a system that works well and was not questioned). Students were involved throughout the entire design process, however, and even though they did not question the basic program (which they quite like), they did effect some changes, such as the type of bathing facilities they wanted.

If the buildings show little innovation in conception, design, or execution why, then, are they of interest? Part of the reason is precisely because they do not involve such innovations and the reasons they do not, which can be attributed to an extremely restrictive set of circumstances that involved not only the client and the site, but in this case also the donor, after whom the buildings are named. A more important reason the buildings are of interest, however, can be seen in the manner in which the architects have dealt with these restrictions—in the intelligent and thoughtful way they have responded to a situation where they had little voice in the functional organization of the buildings, where they had no involvement in the site selection or in its landscaping, and where even the style of the buildings was predetermined.

Harvard wanted to increase its freshman enrollment, mainly to be able to admit more women students. Since freshmen have always lived in the Yard, there was no ques-

The seven buildings of Harvard's new Canaday Hall dormitories at the north end of the Yard are made small to fit their tight site. Windows are scaled to relate to nearby buildings; and like other freshman residence halls in the Yard, these also create their own small yard-within-a-yard.





Canaday Hall, Harvard University

At Canaday Hall, windows facing the Yard (right) are scaled to match the 6-over-6 windows of the older buildings, but one 6th is left out to give a small-scale element to the small buildings. As compensation to those who must walk to the top, top-floor living rooms (facing page bottom right) are skylighted and bedrooms (facing page bottom left) are given additional height for space to be used as a sleeping loft or for an additional student if necessary. The terne-coated stainless steel of the pitched roofs will soon darken to match slate roofs of older buildings nearby.



tion that it was where the new dormitories would be. The only available site was a restricted piece of land at the north end of the Yard, bound by Memorial Church on one side and by the Broadway-Cambridge Street underpass on the other side. This small parcel was once the site of Richard Morris Hunt's Hunt Hall, now demolished (it was never a particularly usable building), which was the original Fogg Art Museum, more recently occupied by the architecture and graphics department. The site seemed too diminutive to contain a building that was expected to house 214 students, and even more early in the school year before the usual drop-outs depart. The architects solved this problem by breaking the dormitories into seven distinct buildings (which are carefully designed to adhere to principals of an older geometry they discovered existing in the Yard) and by making each building physically smaller than any of those that are nearby (the five-story portions of Canaday Hall are little higher than the four-story 18th and 19th Century buildings nearby). In order that the new buildings not appear as miniature buildings, however, the architects designed their windows to be in a scale that would be compatible with the older buildings, but they did this so that the windows would actually present a smaller scale. Where the windows of the older buildings are usually 6 over 6, with high articulated lintels and visible floor lines, each window in Canaday Hall that faces the Yard is proportionally, if not actually, a 4 over 4 juxtaposed to a 2 over 1 operable sash; that is, each is treated as two separate windows that are equal to one 6 over 6, with one of the 6ths left out.

As a further gesture to compatibility with its surroundings, Canaday Hall employs a red brick similar to that of the older buildings and, like the other residence halls in the Yard, the new dormitories have been arrayed to enclose a small courtyard that is clearly identifiable as their own. At the east side of the complex, where a two-building arm of the dormitories extends, a second smaller and more intimate courtyard is created by the backs of the buildings and an old half-circular gateway, part of the fence that encircles the Yard. Also, like the older buildings, the new dormitories are of simple wall-bearing construction. A significant difference, though, is that they were built with fast-track meth-

ods—only 18 months elapsed from inception to occupation—and all interior partitions, except those surrounding stairwells, are easily removable if other uses are ever required of the buildings.

A further similarity to the older residence halls is that, like them, Canaday Hall also has only single rooms. Basic furnishings—a bed, desk, and bureau—are provided by the university, and students are free to do whatever else they may wish with their rooms. No more than four students share a living room, and these are unfurnished—the students must bring whatever they want.

In each building, bedrooms are on one side, living rooms, baths, and stair are on the other. This wise arrangement puts all study-bedrooms on the south or west facing into the Yard, away from the heavy traffic of the street and the noise of the firehouse immediately to the northeast. Like the older dormitories, these new buildings are also walkups, but as a compensation to those who must walk to the top floors, skylights have been installed over their living rooms. The rear of the skylight monitor, however, is over the bedroom area, separated from the living room. In each top-floor room this provides a high, pitched space that could accommodate additional students by making a two-bed room, if necessary at the beginning of the school year. The dormitories are coeducational, with male and female students on alternate floors. A kitchenette and dining room are provided, but most freshmen, by tradition, eat in the student union.

Basically, the buildings are background buildings. The intention was that they not intrude on the Yard, and they do not, except for the rather unfortunate scale and color of the silver pitched roofs. The roofs, however, are of terne-coated stainless steel; this material was specially chosen because it will soon darken to a flat gray not unlike the slate roofs of the surrounding buildings, and then the pitched roofs will appear smaller. The real justification for the pitched roofs was in their capacity to adjust to temporary student overloads, avoiding the construction of short-term occupancy rooms which would have made the complex larger.

While not spectacular in design, technically or function-



ally innovative, Canaday Hall does, nevertheless, represent something of a triumph of the will. The simple fact that the architects were able to work within such a confining set of restrictions and still produce buildings that respond with unusual sensitivity and intelligence to their surroundings, and to the needs of those who will use them, is rare. The architects did not have the degree of freedom that is customary with commissions of this nature, but for them, "to attempt the job within the time, cost, and site restrictions determined by Harvard was the most interesting aspect of the work." They did not, however, completely submerge their will. The donor's request when giving the money to build Canaday Hall was that the buildings be designed in the Georgian manner typical of the Yard. This, however, turned out to be negotiable in the end, and that is a credit to Mr. Canaday and to Harvard, but particularly to the architects who pressed for the change. [David Morton]

Data

Project: Canaday Hall, Harvard University, Cambridge, Mass.

Architects: Ezra D. Ehrenkrantz & Associates, PC; Carl Meinhardt, Principal-in-charge; Jacob Alspector, project architect.

Program: dormitories for 214 additional students; program as written by Harvard University follows a traditional, single-room arrangement, but with some overflow capacity; 70,000 sq ft.

Site: a small parcel at the north boundry of Harvard Yard, restricted by a church and a two-street underpass.

Structural system: precast plank on bearing walls spanning short dimension of each block; light steel roof framing.

Major materials: masonry; concrete plank; steel roof framing; exterior brick; terne-coated stainless steel roof. (Materials list, p. 92)

Mechanical system: heating, fan-coil units, baseboard radiation; air conditioning, fan-coil units.

Consultants: Peter G. Rolland & Associates, landscape; Ebner-Schmidt Associates, mechanical; Zoldos/Silman, structural.

Client: Harvard University.

Costs: \$2.8 million; \$40 per sq ft.

Photography: Steve Rosenthal.



Pieceable kingdom

An experiment in design and management strategy succeeded in altering attitudes and behavior toward a sterile and heavily vandalized dormitory complex.

With campus populations ranging to 20,000 or more students, computerized course descriptions, and a student activist population who would rather debate international policy than join a secret society, the present reality of education bears no resemblance to the ivy-covered halls of the 1940s and 1950s. Education is no longer just for those who can afford it, but a necessity everyone expects. Yet, while the reality has changed, most universities, disregarding radically different student attitudes, have continued building the traditional classrooms and dormitories.

Like many schools during the more prosperous 1960s, the University of Massachusetts in 1968 completed a major dormitory complex for its Amherst campus with the greatest of expectations about its use. A University brochure states "... The University has found a solution to massive growth problems which minimizes construction costs per student and joins residence and academic areas in a wholly new continuum of the learning process, while preventing the living units from becoming impersonally large. The designers studied student suggestions and traffic patterns before drawing final plans for the new facility. The furniture, of many cheerful colors, was designed specifically for university use and has undergone extensive pretesting. All furniture is movable to provide the utmost flexibility for individual taste."

While no one will quarrel with the lofty intentions set forth in the brochure, the reality fell far short of the expectation; intentions remained intentions only. After two years of literal "occupation," the Southwest Residential Complex, designed by architect Hugh Stubbins, resembled a battlefield. The \$23 million investment had produced five 22-story residence towers and twelve 4-story residence halls (for 5600 students) which were in a state of siege. Graffiti defaced the walls, garbage and trash were strewn about the halls and public areas, the "open space" remained vacant, the lounges were stripped of any furniture that was not built in and, in one academic year alone, the complex suffered nearly \$25,000 in damages.

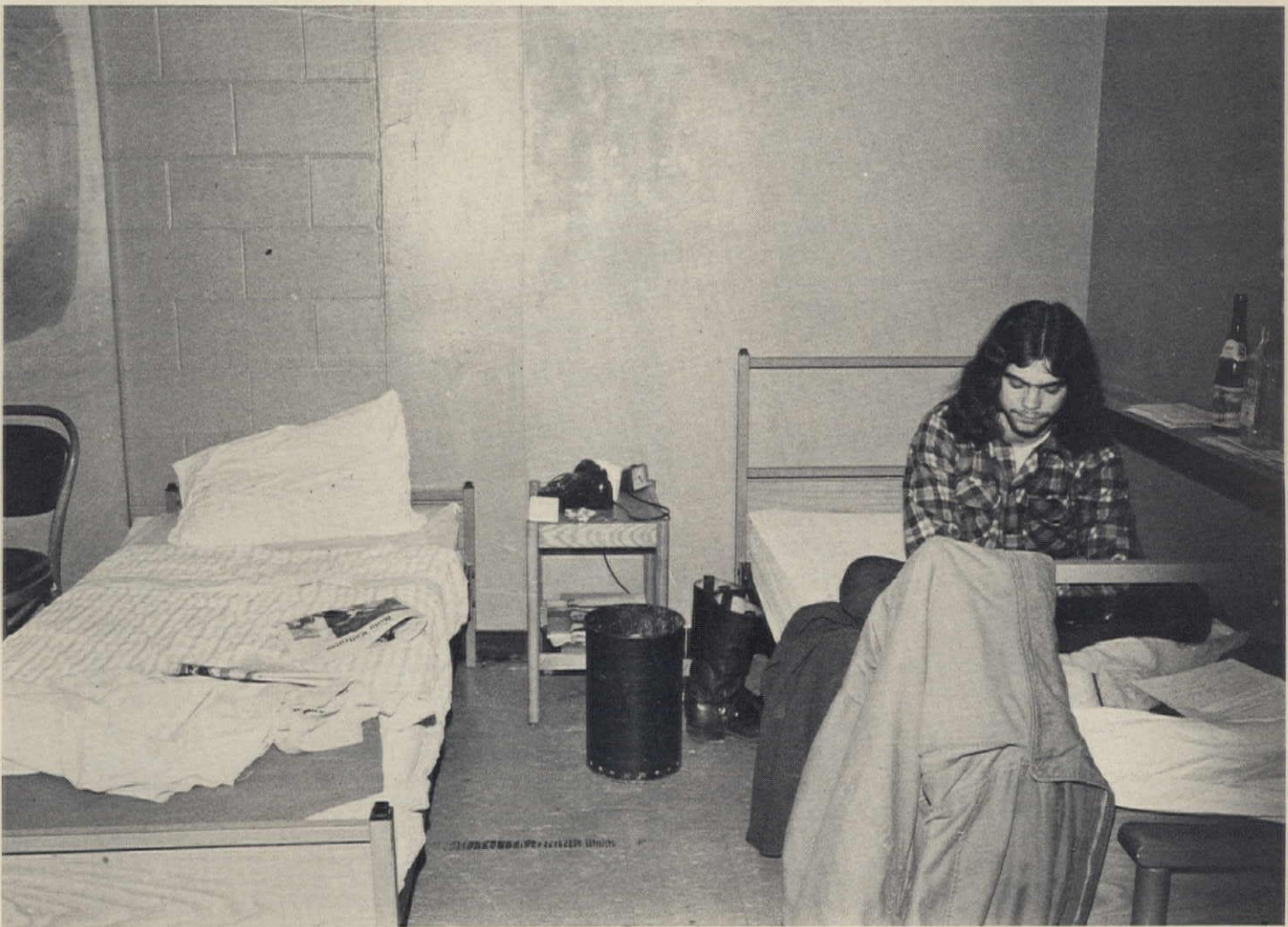
Perhaps there happened to be an enlightened administration, or perhaps the damage was just too obvious to ignore, but university officials began to sense that something was not right, that this "wholly new continuum" had not materialized. Dr. John A. Hunt, Director of Southwest and Raymond A. Werbe, newly appointed Environment Factors Consultant began to assess and define the problem. In Werbe's words "... there seems to be some correlation between the behavior patterns and [a] lack of any feeling of ownership." More specifically, Werbe felt that because the monolithic and mechanistic environment of Southwest was inflexible, the result was an alienation of the student from his physical surroundings. "Added to that is the increasing awareness in the residents that much of the space and equipment is of little use as it was originally planned ...". The resulting antisocial behavior can readily be seen in the vandalism, stealing, and lack of community responsibility.

A method for the madness

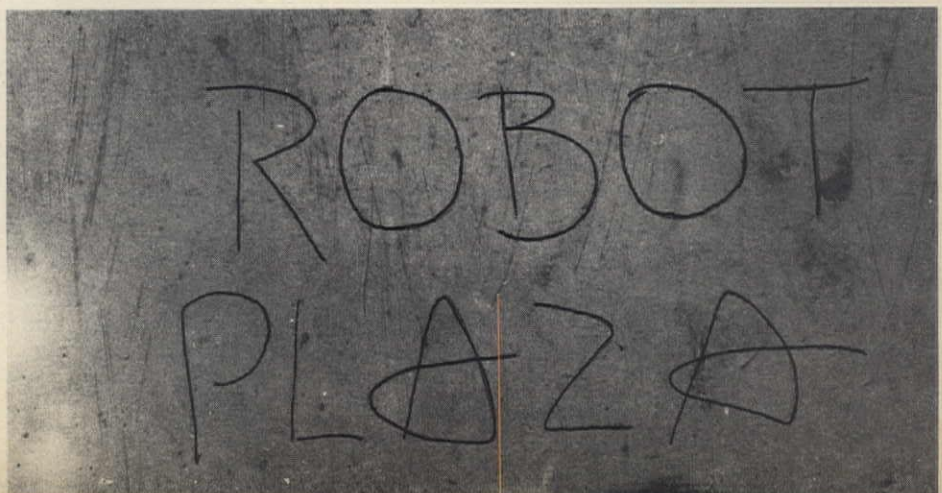
Although Werbe had undertaken some student participatory programs—painting corridors and their own rooms—it became quite clear that to deal effectively with the scope of the problem and its solution, outside consultants would have to be brought in. The Herman Miller Research Corporation, with prior experience in dormitory research projects, was selected for the task.

The research method (as well as the program) produced what may be one of the most scientific and thorough studies ever applied to architecture. The *modus operandi* was that of a scientific study with a control group and an experimental group in order to assess the effectiveness of any changes. By using enough students to provide a good sampling, data were collected by photographically documenting actual interactions and negotiations with the physical environment, and through personal interviews. Further, the experiment was carried out over time long enough to ensure that any changes were real and not transitory.

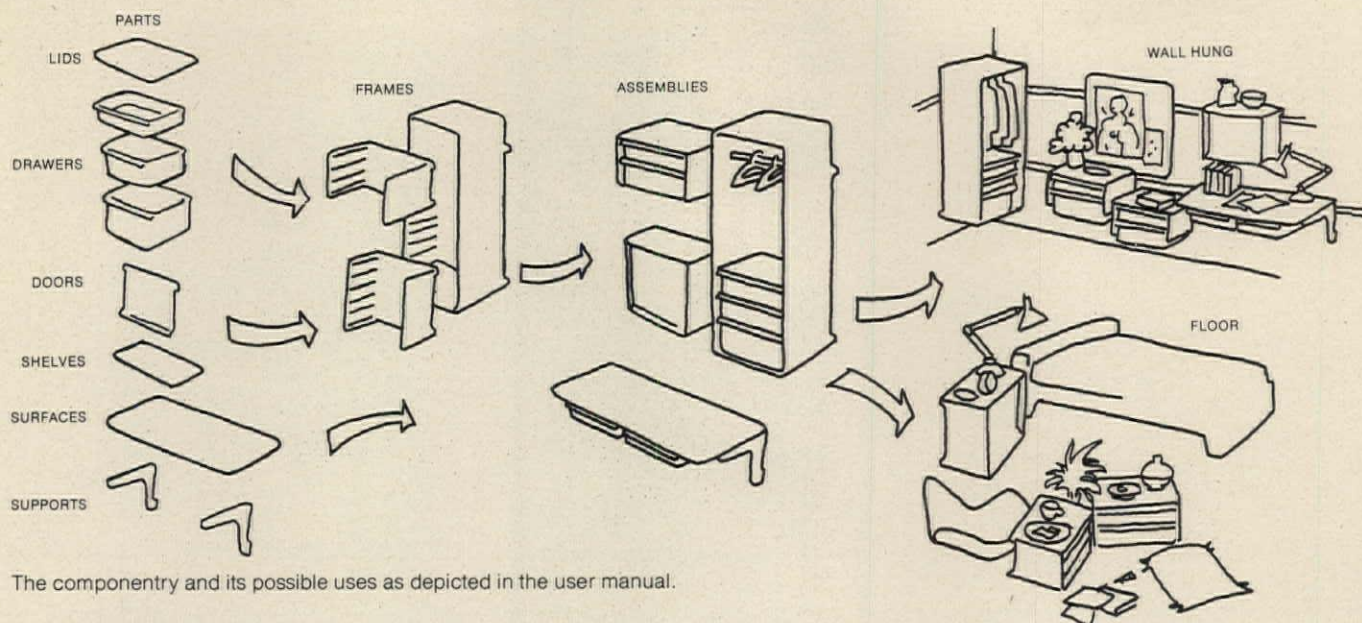
The program not only outlined physical changes in the design and layout of the rooms as the basis for the experiment, but also changes in management policies and attitudes which were seen as a very integral and necessary part of any physical change. As written, the program contained several key conceptual goals: Possession of place,



A process of documentation before the project began revealed that student rooms ranged from the "just camping out" style of the room pictured above to attempts at obliterating the inside with lots of makeshift furnishings. The graffiti on the walls leaves no doubts about the message being received.



Interior architecture: University of Massachusetts



The componentry and its possible uses as depicted in the user manual.

student's ability as an individual to establish a "home" and to relate to a larger community; Responsiveness, an attempt to increase the number of options and choices left to the student; Negotiation, the provision for give and take between the student and the university. Several very pragmatic considerations were also written into the program: Is the solution practical? Can it be maintained and managed with conventional skills and resources? Can it reuse the same facility without major structural work or renovation?

A little action in the bedroom

Two floors, each in a different tower, were selected as the settings for the experiment, with an average of 32 people per floor. A cross-section of their backgrounds showed them to be similar to the average male college student. For the first year, occupants of both floors were used as a control group for documenting current attitudes and methods of adapting to one's environment. A detailed management program for the experimental group and a user handbook for the students were written during this period.

For the second year, one floor remained a control group, while the other floor was structured as an experiment. The proposal for the experimental group was to break away from the more conventional type of furnishings and to substitute a series of more flexible components—assembled from Herman Miller's Action Office and CoStruc Systems—for seating, storage, and work surfaces. Preparation of the experimental floor required the removal from the rooms of all built-ins, applying a coat of paint, carpeting the floor to encourage use of the floor surface, and mounting rails on the walls at three varying heights from which the components would be hung. In addition, the students, with the help of the research team, painted the corridor and the doors of each room and chose new carpet and lighting for the corridors.

The most interesting and unconventional aspect of the experiment was the management concept behind the use of the component pieces. Each student was allocated a number of components, including a self-making bed/lounge, a work surface, storage units, and seating, which he was then free to locate in any way in his room. Further

choice was possible through the new Resources Store stock of additional components. If students wanted (or could afford) more components, they could trade in unused components or purchase additional ones at nominal cost. The Resources Store, as part of the management aspect of the program, became the necessary link with the community at large and provided the opportunity for negotiation and control not formerly available. The Resources Store, however, was not confined to doling out additional components, although part of the experiment was to keep a detailed record of the transactions which took place, to understand just how the components were being used. Beyond that, the store was conceived as a place for information, tools, how-to books, games, specialized equipment for short-term lending, as well as for news of other events.

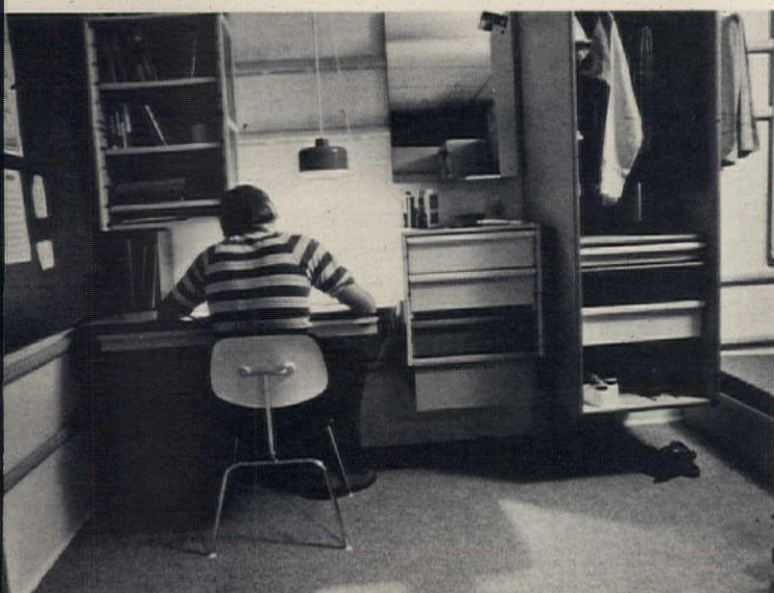
Besides dealing with the corridors and individual rooms, the retrieval of the lounge areas for community use was also part of the experiment. The residents, along with the research team, discussed the reasons for the failure in the past years of other lounge areas and decided on a course of action for such areas on the experimental floor. The large space was repainted, new carpet was installed, some conventional furniture was brought in and, with the aid of movable screens, smaller and more manageable areas were created so that more than one activity could take place simultaneously.

AN's not well that ends well

Since the premise of the experiment was not just to improve the environment but also to measure the effect of change on the student's behavior and attitudes, an evaluation was made after the second year of the experiment. Nothing drastic or earthshaking emerged from the evaluation partly because the experiment was so pragmatic in nature. User response was positive, however, not only to the individual rooms and the user's ability to manipulate his own environment, but also to the sense of community use of the lounge area as an alternative place for activity and to the Resources Store as a place for information and negotiation. In much more hard-nosed terms, the annual dollar/student assessed damage costs dropped by over 50 per-



Experimental rooms as the students chose to furnish and use them.



cent from the conventional room figures. The return rate of students (once they have a choice) is another indication of satisfaction. Typically, the control floor lost 63 percent of its sophomores, while the experimental floor actually increased the number of sophomores who elected to stay for their junior year. More general conclusions were summed up in the Research Report written by Robert Propst and his daughter Claudia, the two principals from the Herman Miller Research Corporation involved in the project. "The experiment provided a method for the residents to communicate and negotiate with the University on their living needs. Consequently, students became positive activists. A wide diversity of living patterns was encompassed without conflict with the University, and less energy was spent struggling against the surroundings. Lastly, there was a sense of community ownership and responsibility for the entire floor. The rip-off syndrome declined; vandalism and careless destruction virtually ceased and the floor regained the interests of a healthy small society."

Despite the obvious success of the experiment, both in quantitative and qualitative measures, the idea has not

been applied to the Southwest Residential Complex as a whole. The experimental group completed its full year of residency in the Spring of 1973; the research report and findings were issued during the following year. (They are available from the Herman Miller Research Corporation, 3970 Varsity Drive, Ann Arbor, Mich. 48104, \$5.50.) The Resources Store continues to serve all residents in an expanded form and is well on the way to becoming an established part of the dormitory complex. Curiously, the status quo otherwise has been maintained: the experimental floor is still in use and, in fact, is in great demand while the other 109 floors of high-rise rooms remain unchanged, still manifesting the outward signs of rebellion. The architect of the complex, Hugh Stubbins, asserts he knows nothing of the problems, although other sources said he had been repeatedly asked to help remedy the difficulties. The university, while enlightened enough to acknowledge the issues at Southwest and attempt a change, now seems reticent to acknowledge success. It will probably be only after the furnishings are destroyed and are no longer usable that the University will invest in new equipment. In the meantime, human adaptation and its consequences will provide a vivid scenario at Southwest. [Sharon Lee Ryder]

Credits

The experiment was conceived and undertaken by Robert L. Propst, Claudia G. Propst, and Michael Wodka of the Herman Miller Research Corporation in conjunction with the University of Massachusetts, John A. Hunt, Director of the Southwest Residential Complex and Raymond A. Werbe, Environmental Factors Consultant. Funding and support for the experiment was provided by the University of Massachusetts, Herman Miller Inc., Herman Miller Research Corporation, and the Educational Facilities Laboratories of the Ford Foundation.

'Wrong but impeccable'

Ada Louise Huxtable

The first increment in Roche-Dinkeloo's grand plan for museum expansion is judged an architectural achievement, however questionable its program, by the Pulitzer-Prize-winning critic of *The New York Times*.

The Lehman Wing of The Metropolitan Museum of Art, which opens to the public this week after a stormy five-year course from concept to reality including a trip through the courts, is a *fait accompli* and a *tour de force*. *Fait accompli*, because construction is now complete, making all of the heated controversy about the Lehman collection's disposition and housing, including pressures for museum decentralization and a lawsuit to prevent expansion in the park, almost—but not quite—academic. *Tour de force*, because it carries out a highly questionable program with consummate ingenuity, artistry, and skill.

What the Met and architects Kevin Roche, John Dinkeloo & Associates have produced is a coolly impersonal and quite exquisite small museum dedicated to the myth of the perpetuation of the personal stamp of the donor, through a stipulation of the bequest that seven rooms from Robert Lehman's 54th Street house be re-created as they were in his lifetime, as part of the building and its installation.

If one can, as a start, accept as desirable the reproduction of a 1959 Paris decorator's version of how to turn 1905 rooms designed by the architect of Grant's Tomb into an "appropriate" background for Renaissance art—the rooms laid end-to-end in the park (buried and blind) instead of top-to-bottom on a city street—then one will have no ambivalent feelings about the building.

If it seems a little ludicrous or less than ideal for the art—then this handsome building falls down, conceptually, like a pack of elegant cards. But if the premise is accepted, the talented agility with which this curious handicap is metamorphosed into a structure of considerable aesthetic drama can only be admired. It is a neat trick, superbly executed. On these terms, it is a classy job.

Author: Ada Louise Huxtable, a member of *The New York Times* editorial board, is the second woman ever to be so named. Between 1956 and 1958 she contributed a series of P/A features, "Progressive Architecture in America."

Let me make my own feelings clear. I am split right down the middle. I believe that the Met has done the wrong thing impeccably. The architects have designed their way out of the trap set by the terms of the gift—and it is a trap no matter how glossed over by smooth rationalizations—with taste and expertise. The quality of the collection and the pleasant way the building functions for the viewer are, in the end, the all-important factors. It is my personal feeling, however, that the pavilion vastly overcelebrates the collection and the donor. Having said this, let me describe how well a dubious thing can be done.

The Lehman wing, which cost \$7.1 million and is completely paid for by Lehman funds, is set like the jewel of the Met's crown, on the building's main axis at the west, or park side. It is approached through the entrance wall of the original museum building, an 1880 Ruskinian Gothic remnant by Calvert Vaux and Jacob Wrey Mould, preserved by order of the Landmarks Commission.

The addition is a near-square set at 45 degrees to the central structure, topped by a pyramidal glass roof. This roof covers an 82-foot-high open court at the heart of the building, treated like an orangerie, with trees and movable chairs. The lovely moods and mutations of daylight and sunlight, so long banished from so many artificially lit modern structures, are rediscovered and celebrated here.

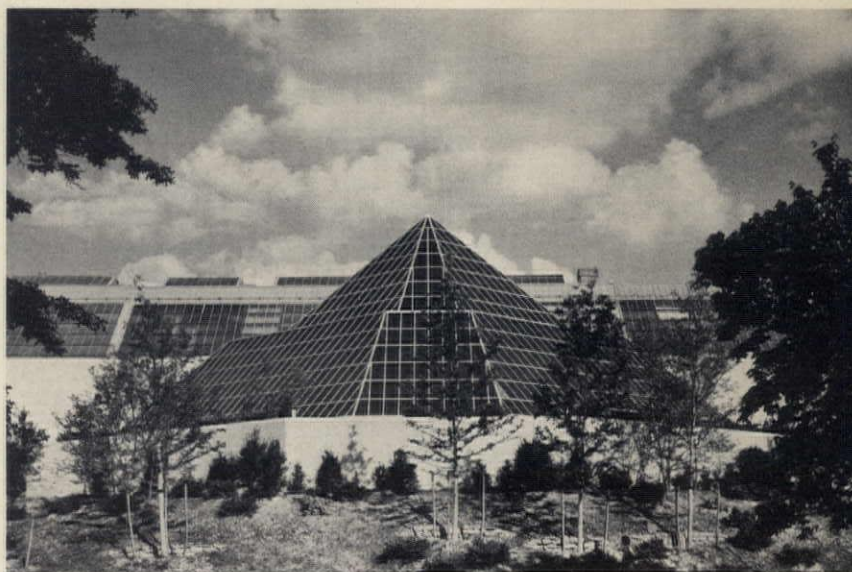
The walls are of solid masonry construction, of the same buff Indiana limestone quarried for the old Vaux and Mould building. Paralleling the four court walls are wing walls that screen stairs to a lower level, where there are drawing galleries and a library and offices. As these walls rise to upper gallery level, they become open frames, offering views of the painting galleries beyond the court that add elaborate planes to the visual space. These spatial effects are calculated with the greatest care, at once dramatic and subtle, simple and complex.

Surrounding the court are two rings of galleries. The skylight continues, sloping, over the first ring, the natural light reinforced by tubes of artificial light shielded by louvers. The second ring contains the "period" rooms. There are, of course, superb study and storage facilities. The museum's director, Thomas P. F. Hoving, and his architectural administrator, Arthur Rosenblatt, have been model clients.

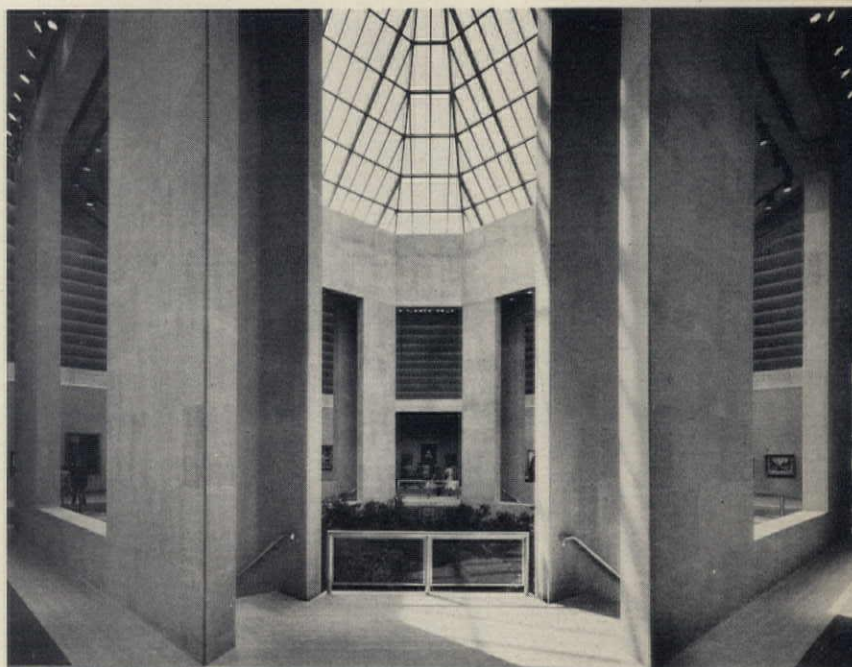
Ordinarily, I love museum period rooms. I grew up in



Period rooms (above) reproduce original settings for Lehman collection. In Garden Court, arches by Vaux and Mould (below and bottom, right) form east wall connection to existing Metropolitan Museum, at skylight joint.



Exterior of jewel-like west façade, with two-tier cascade of skylight.



Interior from entry (above), with clear and baffled concentric skylights.



Photos: Norman McGrath

Lehman Wing

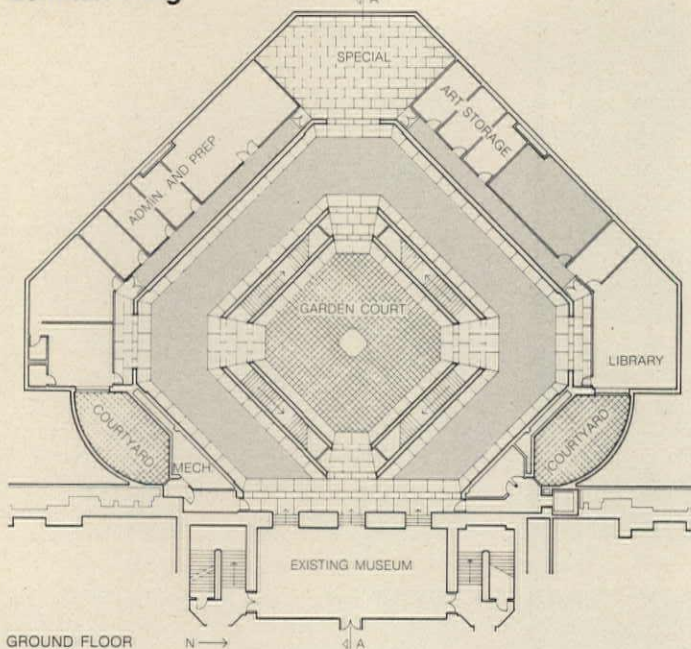
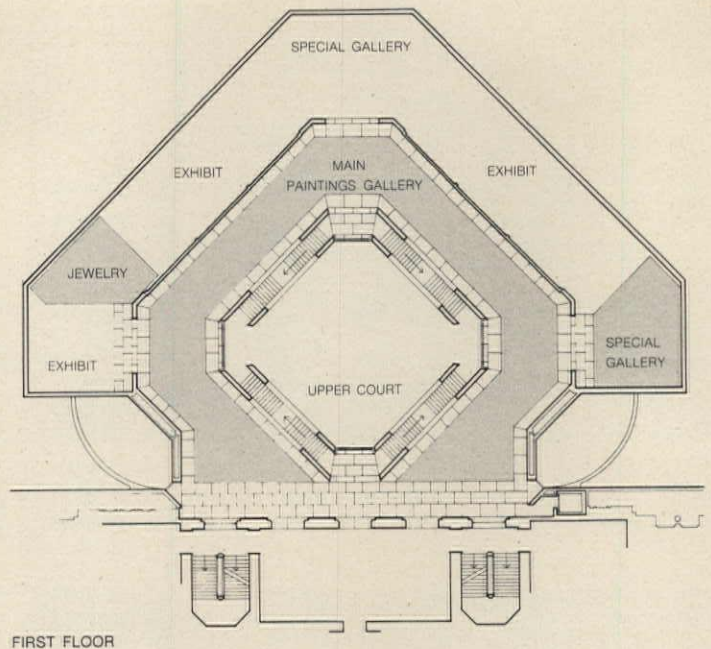


Photo: Norman McGrath



FIRST FLOOR

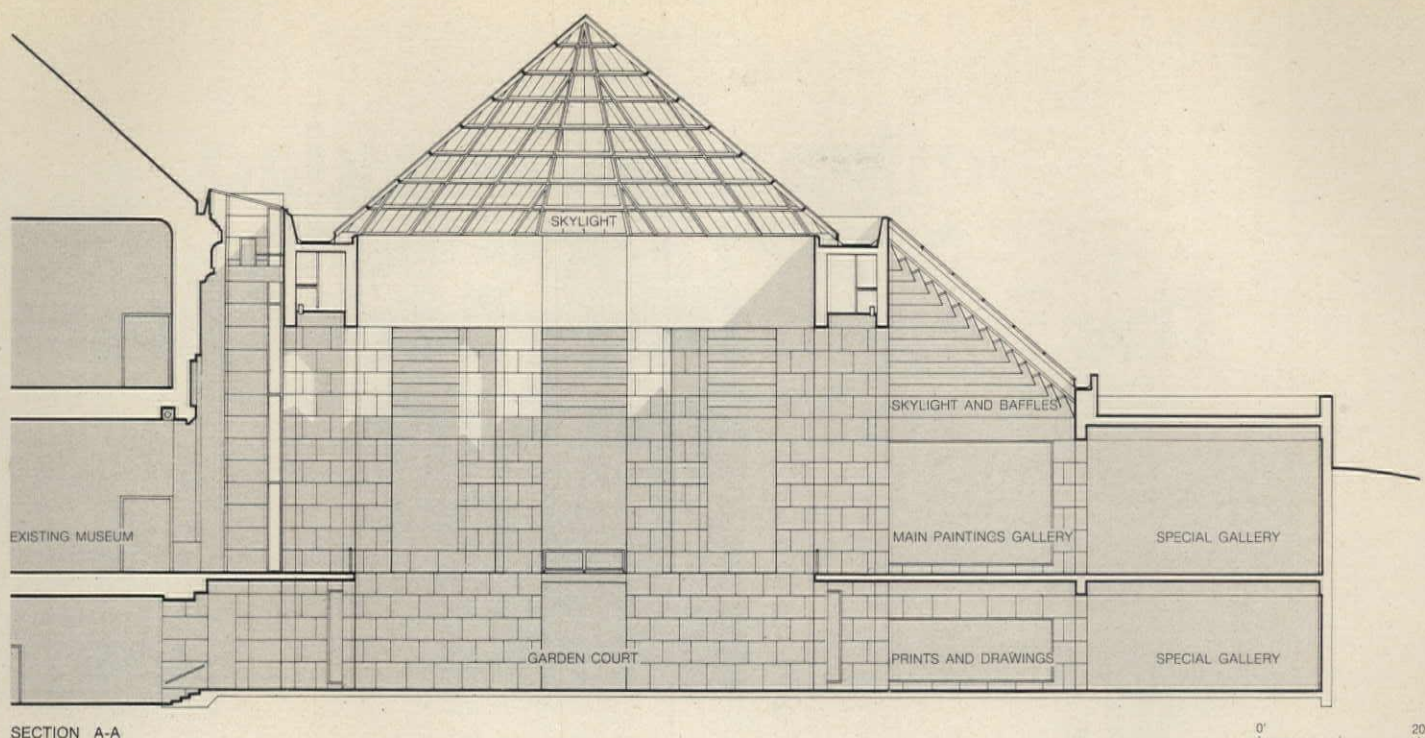


them, as a solitary city child exploring art and history; and the peculiar timelessness of the soft, gray false light through false windows leading to no real world, sealed in a silent, strange serenity, has always been a magic way of capturing another century or style. For me, they are discovery and nostalgia.

These are not great rooms; they are just elaborate rooms filled with great things. This is a trip to nowhere, unless one is curious about the ideas of *richesse* and suitability with which the collection was housed by its owner—hardly a sufficient reason to go to all this trouble. (But getting the collection was obviously good and sufficient reason.) Balanced against the stairway with no destination and the windows with no views is the advantage of a continuous, horizontal traffic pattern over a tight, vertical town house, now that the collection has "gone public." But even with that change, the museum anticipates "showings" or "ticketings" for the small rooms to accommodate the crowds that have become its way of life.

If crowds permit, there are some fine effects to be enjoyed. The architects have not underplayed their hand. The impact is strongly architectural; the visitor gets the court, not the collection, as his first impression. Although the building is actually not large, the style is monumental. There is a moment of uneasiness, in fact, in the transition from the strength and scale of the court to the much smaller scale of the paintings on the surrounding walls. It succeeds in part because the process is eased by some brilliant, almost sleight-of-hand installation: museum theatrics of placement and lighting knowingly underplayed.

Ingres's striking portrait of the Princesse de Broglie is directly on axis across the building as one enters; an outstanding Balthus nude is luminously focused at the end of a long vista between stair walls; large and stunning tapestries emphasize the faceted gallery space between the period rooms. The small, movable gallery chairs (by Ward Bennett) and the passage of people on two levels and in the court below serve to humanize the monumentality and bring the building to life. The drawing galleries on the court



SECTION A-A

floor level, opening onto that light and leafy oasis, add a sense of intimacy to the pleasure of the contents.

But the best view of all was not created; it was there. Facing that marvelous 1880 wall from the far side of the court, one blesses the resolve of the Landmarks Commission. Vaux and Mould upstage Roche and Dinkeloo. The tactility and proportions, the bold style and texture, the strong coloristic effects of striped buff stone and red brick lunettes in the five pointed "Gothic" arches of boldly contrasting buff and gray blocks, the soft salmon brick, make the new structure seem limited in range and somewhat pallid. Past and present together are a knockout aesthetic. The new building is a cool, beautiful statement; but there is more real sense of architecture in that one old wall.

Outside, Coffey, Levine & Blumberg's landscaping is a curious blend of bucolic illusion and covert security. Tons of earth are piled up against the structure, almost covering the galleries and leaving the glass roof exposed, for a steeply inclined hill rising from an elevated walk at the edge of the East Drive. This mound is being gentled with flowering magnolias and a carpet of ivy. Again, neither money nor taste is being spared to make it beautiful (the museum promises more later), it is about as successful a compromise with non-park use as could be effected. It is not going to make park conservationists happy.

The questions that remain unresolved are large ones about a museum's proper urban and environmental role. The Lehman Wing is the first addition of an estimated \$50-million expansion that will increase the museum's collections enormously and enlarge its space by almost a third, upping the present overwhelming 950,000 sq ft by another 350,000. The recent gifts of museum-size collections such as the Lehman pictures, the Rockefeller Collection of Primitive Art and the Temple of Dendur—construction for all is in progress—become a kind of museum overkill or engorgement with no viewer able to see or absorb more than a small fraction of the whole.

The Met is a champion acquirer; for a while the Cooper-Hewitt decorative arts also seemed slated for absorption.

Instead, the city has gained the Carnegie House for a Cooper-Hewitt Museum where the fine, small-scale possessions will not have to compete with overwhelming grandeur. Some years ago there were plans to annex the Whitney Museum; in its own distinctive building now, it provides another kind of museum-going experience.

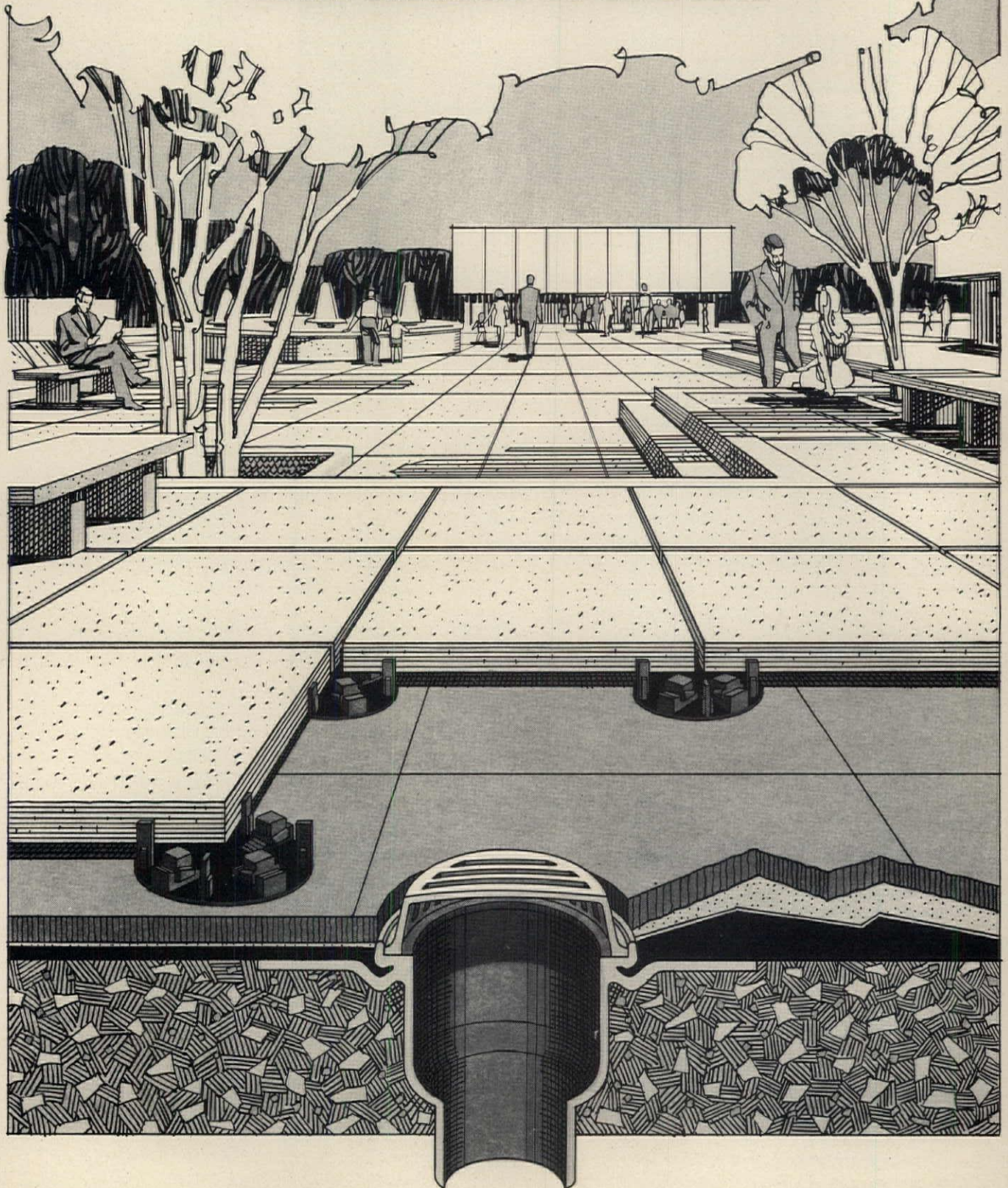
Infinite possibilities exist for museum-size collections to provide a diversity of resources and pleasures to other neighborhoods. The small museum is a nucleus of development, a generator and reinforcer of values, an incentive to community activity, a diversifier of function, an unparalleled social and urban asset. There are threatened landmarks, such as the Villard Houses in midtown and the Custom House downtown, crying for this role.

The Metropolitan has chosen to interpret decentralization as the provision of aid and loans to community facilities. That misses the point. The museum as neighborhood anchor goes beyond such generous gestures. It is a city-strengthening physical resource; it can stabilize, enrich, and renew to tremendous urban advantage.

That is why this superbuilding venture for more and more supercollections in the mother lode in the park disheartens the thoughtful urban critic. There is no doubt that the city's loss is the Metropolitan's gain. But if the critic counts among his finest memories the unique impact and joys of the encompassable small museum, associated with special parts of cities, often with its own style, subject, beauties, and eccentricities, the reaction to the Met's program is depression and alarm. Numbness and numbers are no substitute for the intimate aesthetic experience. And the Lehman Wing, for all of its splendor, is a suave and seductive exercise in some of the less admirable aspects of the world of art and museology. □

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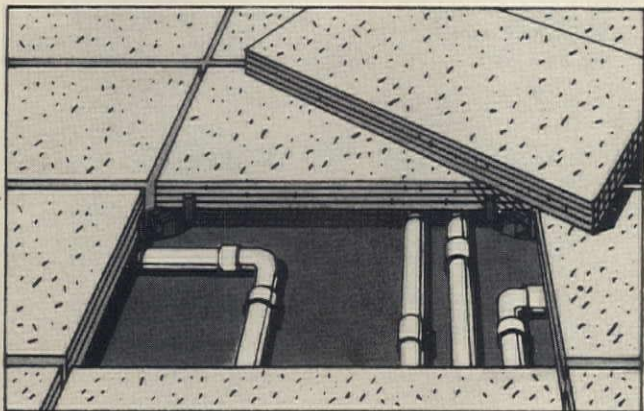
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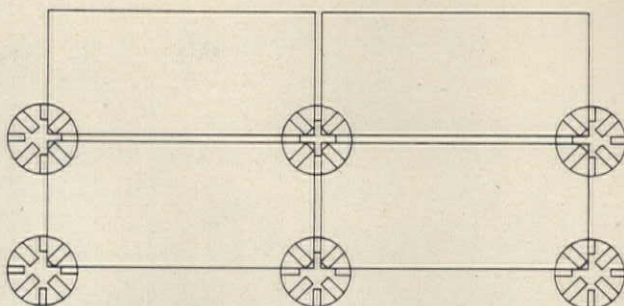


Accessibility is so easy that where codes permit, it's possible to run service cables in the space between the pavers and the slab.

How the system works.

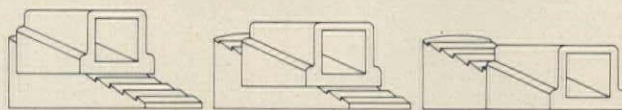
The Tremco Plaza Deck System is based on two fine products—ingenious KingPin® pedestals and proven TREMproof liquid polymer.

TREMproof is fluid applied to the structural slab. It cures to a seamless blanket that adheres strongly and becomes an integral part of the structure. It withstands continuous



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adjustments in 1/16 inch increments to allow for deck or paver irregularities. KingPins can take a tremendous weight load—10,000 pounds on concrete; up to 2,500 pounds on insulation board. They won't rot, crack, melt or absorb water in normal use.

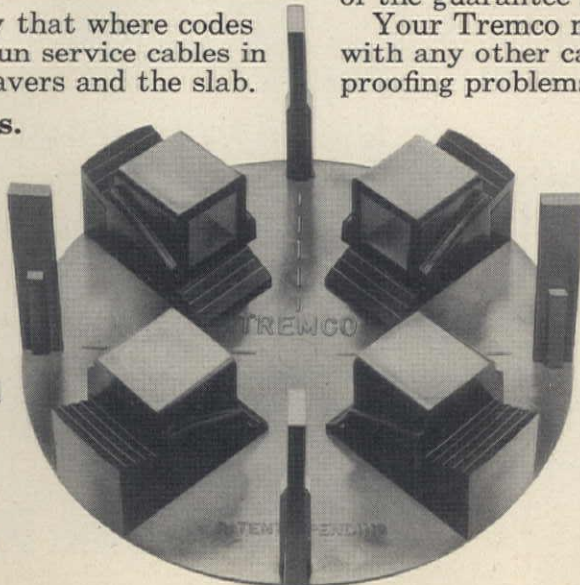
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Another important part of the System is the experience of Tremco in providing technological expertise to make sure the System works. Your Tremco man will work with you at the design stage; with you in specifying materials and with your contractor in providing on-site application instruction and inspection. And he's always available for consultation even after the job is done.

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Cookson Rolling Doors
Best way to close an opening.

Product evaluation

Alvin D. Skolnik

It's the specifier's duty to transform conceptual design into physical reality. This is a blueprint for product evaluation, a delicate, far-reaching, and complex task.

Evaluating products is a complex undertaking. Think of the infinite variables which distinguish one product from another, and the conditions of use they will see. However, basic considerations apply to virtually all evaluations. Before a problem is solved it must be identified, obviously. For one thing, we must not think of a product as an isolated entity. Rather, it is an element or component within a system. The system may be required to satisfy requirements related to aesthetics, functions, construction sequences, codes, or economics.

What are the necessary systems components? Systems and their component materials must be mutually compatible. Each component must perform a specific function.

Evaluation and interpretation.

Your own personal experience should be of considerable importance in evaluating gathered information. But beware of prejudgments! You may trust a reputable company representative (perhaps a friend) who has sold you a good product before. However, if he is selling something new, it must stand on its own merits. Do not specify a product because a salesman tells you "another architect did." His requirements or conditions of use may have been different. Then again, he may have regretted it. Ask for any proof you need to satisfy yourself. No reputable salesman will refuse your request. Remember, the architect is responsible regardless of anyone's claims.

Another question is whether the product satisfies all requirements *not* subject to change, such as codes. Where prior approval by regulatory agencies is required, it should be obtained by the *manufacturer* before you decide to use the product. (Imagine your predicament over a delayed approval.) Be certain of definitions of terms in code requirements. Whatever a manufacturer claims, make sure you precisely define his terminology.

And what is the product's performance record? Consider the financial conditions and production capacity of the manufacturer, particularly if he is new, small, or inexpe-

rienced. Visit completed buildings where the product was used under conditions paralleling those your project anticipates. Talk to the building's owner or maintenance personnel, and the applicator responsible for the installation. Where a product has been developed for use in a particular way, be careful not to deviate from the recommended conditions of use—unless the manufacturer examines your project's circumstances and submits his concurrence *in writing*. You must keep your client fully informed about any risks involved in the use of the product.

Testing

In examining test data, remember that small-scale laboratory tests may not be applicable to your intended end use. The purposes of test must be clearly spelled out. It should be apparent that agencies like ASTM sharply define and limit the conditions, applications, and variables of their tests. It therefore behooves you to determine a test's applicability to your end use. Become familiar with the work and the reputation of the testing laboratory. If the data is not complete, request specific additional information.

Familiarize yourself with the tests established as yardsticks in the industry. A study of the ASTM documents is a good beginning. Consider the value in your specification of requiring compliance with specific tests and results.

From concept to reality

You must determine if the material or system will perform as intended under actual conditions. Consider the sequence of field operations and the limitations imposed in many cases by workmen unaware of the problems or fine points of the product's installation (particularly new products).

Will field procedures be difficult to carry out? Are precautions necessary which complicate handling? Can material damage adjacent work? Determine whether the trade people in the project vicinity are familiar with the product. Very often manufacturers will work only through franchised applicators to ensure quality installation. Consider specifying a requirement for direct supervision by the manufacturer. Such service is often available.

Most manufacturers and their representatives are well qualified to work with you in your building program. Most know their product's limitations very well, and would rather you knew them too. Beware of the manufacturer who won't cooperate fully with you. By the same token, you must always maintain an objectivity in your research. For some sound advice see "Safeguard in Specifying New Products" by John S. Martel, *Guidelines for Improving Practice*, Vol. 1, No. 4, distributed by Victor O. Schinnerer & Co., 5028 Wisconsin Ave., N.W., Washington, D.C. 20016. □

Author: Alvin D. Skolnik, FCSI is Director of Research and Specifications, Skidmore, Owings & Merrill, New York.

Supershed

Many architects abhor this pre-engineered building or hot box or tin shed. But 10 years ago the heir to the Quonset hut inhaled a whiff of systems theory, and something happened to the metal buildings industry.

Once upon a time, America packed an entire building piece by piece in its duffle bag and went to war. It wasn't much to look at. But it didn't mind the war. Its metal components could be assembled anywhere, weather any climate, and pack up again at any time. When the war was over, America felt a grudging affection for this building, and gave it new uses at home.

The Quonset hut of World War II introduced the nation to pre-engineered buildings. America didn't invent it. But translating the British "Neissen" tent of canvas and wood into an all-metal structure broadened its applications considerably. This Yankee pragmatism has guided the metal building industry, represented by the Metal Building Manufacturers Association (MBMA) in Cleveland, ever since. In the search for raw utility space, the Quonset became a stock item for farm and factory storage, a product which, under the influence of systems theory and the historic School Construction Systems Development (SCSD) program in California, became a highly systematic and industrialized structure of wide commercial appeal.

Pre-engineered building is not complex building. Rather, it is the opposite. Stock structural members of predetermined size and stress capacity are positioned along rigid module lines and enclosed within and furnished by standardized architectural elements keyed to the same module. Design within its regimen is like calculation within a mathematical universe. If you accept its axioms, you may perform its operations. There are great strengths and weaknesses to this, as we shall see.

Cinderella did it

The Quonset was as crude as it was versatile. Joinery was simple and connections made no pretense of high finish. There was no effective insulation to speak of, so the familiar arching form respired like a reptile: hot in the tropics, cold in the arctics. One inescapable style suited all purposes. But postwar America was greedy for any kind of construc-

tion; the Quonset sold briskly in the face of its shortcomings. Builders chose bays and spans from catalog sizes.

By the mid-1950s metal building manufacturers decided that the best way to overcome sagging Quonset sales was to abandon it for rectangular enclosures. These were pitched roof storage spaces primarily intended for agriculture and industry. Their guileless shapes and humble purposes needed only the guidance of engineers, so architects rightly ignored them.

The intoxicating decade of economic and demographic growth that followed gave the metal building industry a new sense of purpose. When the Ford Foundation granted Stanford University and the University of California seed money to generate an integrated systems approach to school construction, SCSD, the metal building seemed an ideal model. And why not? It enjoyed a high strength-to-weight ratio, was easy to ship and assemble, and could be rolled out in a variety of shapes and sizes that included most major structural, architectural, and mechanical components. Its ultimate potential seemed to reach far beyond the little red schoolhouse of SCSD.

So the industry was an apt pupil of the systems theorists. The largest of the trade's concerns, Butler Manufacturing Company, has applied systems theory most vigorously to its lines and produces completely finished buildings from trusses to light troffers in a modular framework. Smaller and perhaps more conservative manufacturers still produce little more than a general purpose clad structure, i.e., a shell. And not to be forgotten are the numerous producers whose subsystems are adaptable to these structures.

Add a dash of Julia Child

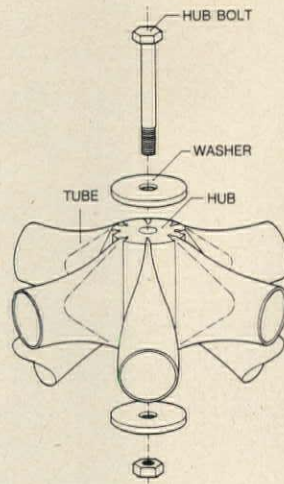
Le Corbusier could never have designed *Notre Dame du Haut* as a pre-engineered building, for all his early polemics about buildings as machines. The system has made too many decisions prior to an architect's arrival for that. A measure of genuine creativity is not precluded. However, the farther one strays from a manufacturer's hardware, the more one pays to integrate the resulting combinations. This can be seen by tracing a state-of-the-art pre-engineered building from conception to completion.

As in any other building project, the process begins with program development. What activities need shelter, how

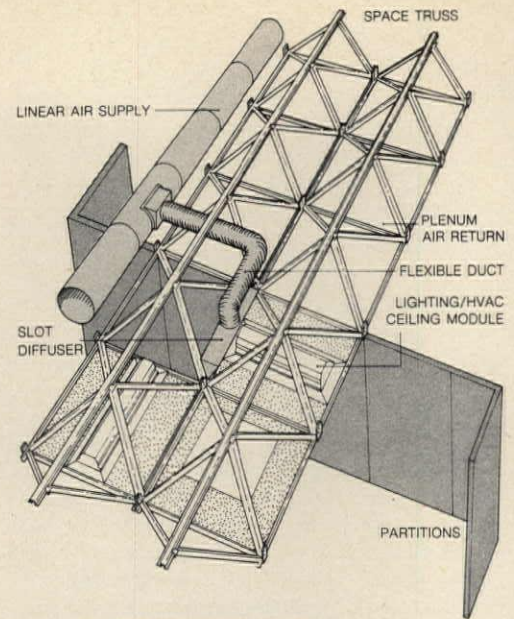
The tin shed comes of age. Here two architectural adaptations of the pre-engineered building use its subsystems extensively. Right: Saab-Scania of America, Inc., New Haven, Conn. has typical beam truss and truss purlin structure. Architect: Douglas Orr and deCossy-Winder. Below: First National Bank of Pennsylvania, Erie, carries space frame on columns. Architect: Kern-Weber-Murphy. Illustrations: Fodrea Community School by Caudill Rowlett Scott, photo by Balthazar Korab. Gardley Corp. office and warehouse by John Morgan, Neecon Design Corp. courtesy of Inland Ryerson (INRYCO), photo by Walter H. Scott. Remaining photos and diagrams courtesy of Butler Manufacturing Co.



Technics: Pre-engineered building



SPACE FRAME COMPONENTS



ADVANCED PRE-ENGINEERED CEILING

much space should that shelter provide, and what spatial relationships will best promote the activities? This information is sketched on a planning grid set to the manufacturer's modulator, typically a 5 ft square. Exterior and interior walls, roof lines, door and window openings are superimposed on the grid.

Then vital information about live and dead loads; wind stress, and kindred stress factors are weighed. Structural spans of a given section modulus are called out from manufacturer's tables according to the designer's estimated needs. Note that he varies the *length* of a member; its *depth* remains constant.

Columns are chosen for standard ceiling heights or specially ordered conditions, and seated on the plan. This can be atop module lines in some instances, or on midpoints between lines. The position varies with the manufacturer's column and beam connection, which may or may not hold the roof structure in sync with the floor grid. A concrete pad usually acts as column footing. With the completion of basic structure, the building is ready for its ceiling plan, the placement of ceiling modules within module lines.

The designer next selects compatible architectural elements to close and finish the building. The most advanced metal building systems cover virtually all needs for the exterior: siding, fascia, soffits, framed doors and windows, integrated ceiling lighting/HVAC modules, and insulation.

Meanwhile back at the computer

The receipt of the designer's preliminary plan sets off a chain of human and electronic reactions in the manufacturer's engineering and architecture departments. Framing plans and structural requirements are scrutinized. Local wind and snow load data are defined in the all too likely event that they were previously overlooked. Conflicts between stated needs and visual documentation are verified with the designer. Unusual structural conditions are analyzed. Most of these operations use computers.

When the structural soundness of the plan is established, the building is drawn by computer using either a pen plotter or a light beam plotter (the latter is much faster). Simple framing plans identify members by code numbers. Detailed dimensions are shown where necessary, but frequently only overall dimensions are given. Elevations indicate what

is not obvious to the builder.

A massive computerized parts list describes the building to the manufacturer's warehouse or, if the item is not commonly stocked, to the factory. Packages of components are assembled at the warehouse in configurations that maximize the weight-to-shipping-volume ratio, and shipped to the site. There, construction by authorized and specially trained builders is very fast. Connections tend to be standardized and deliberately easy to execute. Many interior components, like walls and ceilings, snap in and out for quick adjustment.

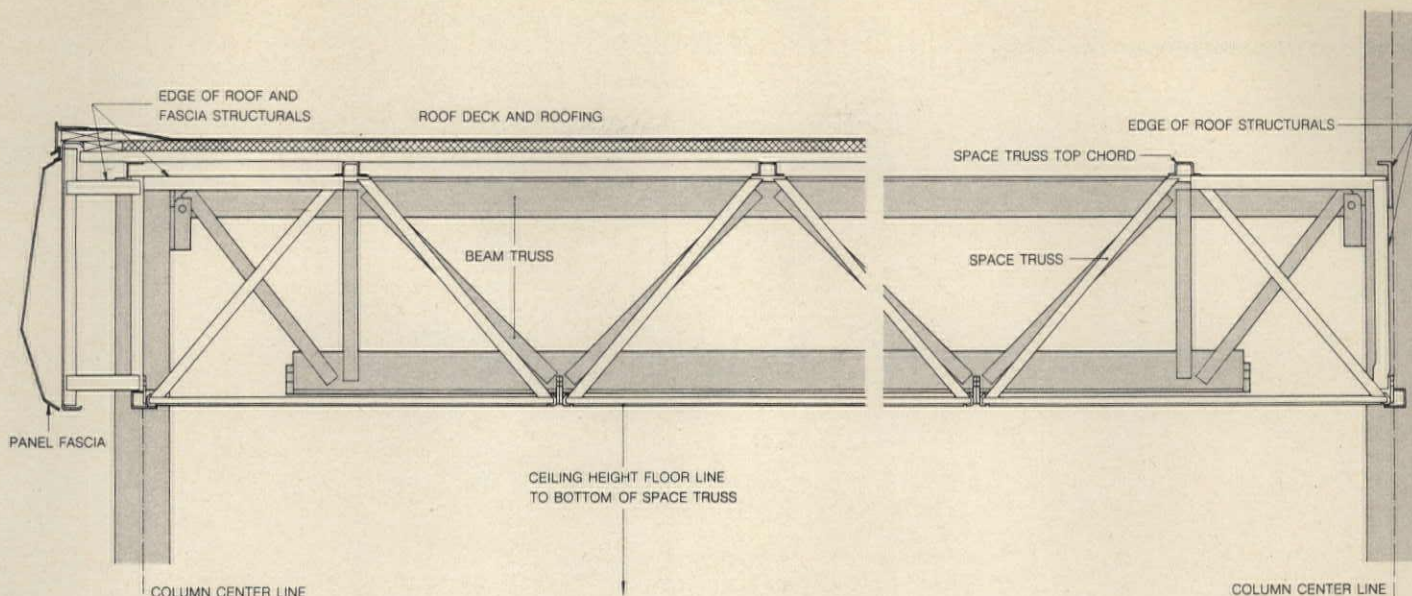
You are what you eat

Obviously, the pre-engineered building manufacturer does not furnish everything. Foundation work and certain other structural work are not included. Still, the truth remains that little is left to chance.

A great deal of care is dedicated to the design, production, and quality control of the components. Accusations over the years that these structures were flimsy, uninsulated, leaky, or incomplete were heeded by the industry. A number of producers have established costly research and development laboratories which test structural capacity, thermal emission, chemical purity, weathering, flammability, corrosion, and wind stress as well as new products and processes. This could be cynically attributed to self interest, to avoid grand scale consumer litigation. Even so, the designer and his client can place a certain trust in the manufacturers' claims.

One service that the larger members of the trade provide that few architects and engineers otherwise can duplicate is constant revision of design details, materials, and performance standards. Because the metal building is really a mass-produced commodity, its manufacturer can afford to inspect "as built" conditions and comment upon empirical inconsistencies. As any experienced architect or engineer knows, three inches of insulation compressed, in normal construction procedures, into a fraction of an inch may allow far more thermal loss than was theoretically calculated. But how many designers are recalled to correct this?

If pre-engineered buildings do very well without architects—and they have up to now with only one in five designed by an architect—the flattery is returned. In inter-



views with some of the nation's leading firms, P/A detected a profound ambivalence toward using these buildings in their entirety or in part.

Foremost among the objections of architects is that metal buildings connote industrial construction. While this is not automatically damning, the imagery does not always endear them to designers. It is an improper visual vocabulary for some architectural clients. As Chuck Nixon of Caudill Rowlett Scott/Houston says, "We admire the work of the industry. But CRS clients are more interested in the standard architectural design process." Ezra Ehrenkrantz, the New York architect and noted authority on systems building, adds that pre-engineered buildings are particularly useful in "warehouse and other simple repetitive construction, where there is little reason for architects." But each case must be individually considered, he cautions. "What is the nature of the design requirements, the client, or the building team?"

Some designers believe the metal building simply cannot serve architectural building types. "The manufacturers have come up with some very handsome products," observes Cesar Pelli of Gruen Associates/Los Angeles, "but so far they are not for us. Maybe we will try one in a large maintenance structure. But not in the office buildings and shopping centers we design."

Ready to wear

Behind these sentiments is also the perception of the pre-engineered building as a *fait accompli*. Gunnar Gruzdzins of John Portman Associates, Atlanta expressed it thus. "The system is glorified as *pre-engineered* when it is really *fully* engineered. It should be seen as a finished building," he says. Or in the words of William Lohmann of C.F. Murphy Associates, Chicago, "If our designers find it hard to accept many stock *parts*, what then of stock *buildings*?"

Nevertheless, many architects have successfully used all or part of a pre-engineered building. They do this even though architectural expression of these structures can be heavily determined by their buyers—who may safely bypass architects altogether in favor of direct negotiations with manufacturers. Thus, the architect's praise is peppered with criticism.

Why do architects like them? Oft mentioned: they are a

rich source of subsystems; they replace much uncertain field work with factory controlled quality; they are well insulated and reasonably durable; they are available on short notice; they erect quickly. In other words, architects value the way they lend themselves to systems design and production as proven assemblies.

Your modulator is showing

There are fly specks on the steel too. The most serious of these may be the unyielding authority of the pre-engineered planning grid. CRS would like to try one manufacturer's product except that CRS places its columns on module lines, not between them. C.F. Murphy finds the modulator too inflexible on a large scale.

However, some designers think the 5-ft square need be no problem at all. "You must ask yourself what you want to accomplish," says Malcolm Holzman of Hardy Holzman Pfeiffer, New York. "Much standard run-of-the-mill construction can compete well with pre-engineered building. So you must have a desire to use it. It's not unlike renovating a building. If conditions are right, you can live with constraints like module dimensions."

Another difficulty arises in violating the integrity of a pre-engineered system, as has been mentioned. Offices like Smith Hinchman Grylls, Detroit, Daniel, Mann, Johnson, & Mendenhall, Los Angeles, and Heery & Heery, Atlanta say they have not designed an entire pre-engineered building, but do consider using the components when they meet client needs. Here the designer must pay. As Malcolm Holzman asks, "Once the steel is up, how do you fill it? The great misfortune is the lack of interchangeability among parts of different manufacturers. One manufacturer seldom has all the options you want."

Still another source of concern is the pre-engineered structural factor of safety, which architects may consider narrow. The factor may not be generous enough at 1.6 or so to allow much unplanned uniform or concentrated loading. The industry strives for lean economical design, and this sometimes necessitates a check of design loads.

Few architects questioned by P/A supported the view of one manufacturer that his product is ugly. Disenchantment with the modulator is a greater concern to them than the implied aesthetic of the system, which can be manipulated.

As one designer experienced in the use of pre-engineered components put it, "Manufacturers think their products are unbeautiful. They hide them with junk used as cladding in the 1950s. Yet these buildings have much structural and architectural integrity, as is."

So nice to have you here

Demand for these buildings grew astonishingly after 1965. Sales increased 317 percent in the decade that followed. If a metal building system represents about 20 percent of a total construction budget (MBMA estimate) then 1974 sales of 1,245,220 tons at \$771 million represented some \$3.85 billion worth of in-place construction. This accounts for some 20 percent of the low-rise nonresidential construction market. Contrary to popular belief, it is not primarily farm or factory work. Industry statistics read: agriculture, 6.5 percent, manufacturing, 29.9 percent, commercial, 36.7 percent, civic, 10.7 percent, and miscellaneous, 16.2 percent.

Somebody likes them. The industry sells them on the alures of speed of design and construction, lower initial cost, low maintenance, low operating costs, flexibility, cost predictability, and options. Of these features, speed of construction, flexibility, and cost predictability are candidly acknowledged by the rest of the building industry.

To hold and extend this enviable volume, the manufacturers continue an energetic program of product development. One producer has even gone so far as to offer custom design and production services for space framing. Its licensed hub and tube structural system, supported by a sophisticated engineering staff, computers, and precision manufacturing facilities, has solved some rather complex topologies quickly and at lower costs than had been predicted. A student center under construction at Rochester University, New York, by architect I.M. Pei uses this system.

Up up and away

Many designers indicate that a multistory metal building would have strong architectural appeal. A number of manufacturers have recently offered new systems that rise 2 to 5 to 10 stories high. The design and fabrication of such medium-rise structures is akin to their low-rise counterparts. A number of them have already been built.

Pre-engineered buildings are an established fact. More

participation by architects in their design and production seems inevitable as they seek to enlarge the scope of their practice. The industry eagerly awaits them.

One reason there has been no stampede is that most metal buildings lack architects—and look it. To quote Steven Winter, New York industrialized building consultant, "If architects turn their backs to them, they are simply ignoring the technical possibilities." Another reason may be the stiff competition offered the industry by fabricators of performance specification steel structures, which provide designers modular flexibility with little loss in project time.

Is it also a matter of ego? Says Ennis Parker of Heery & Heery/Atlanta, "Architects don't need to design everything from the ground up to create architecture. Some just think so." [Roger Yee]

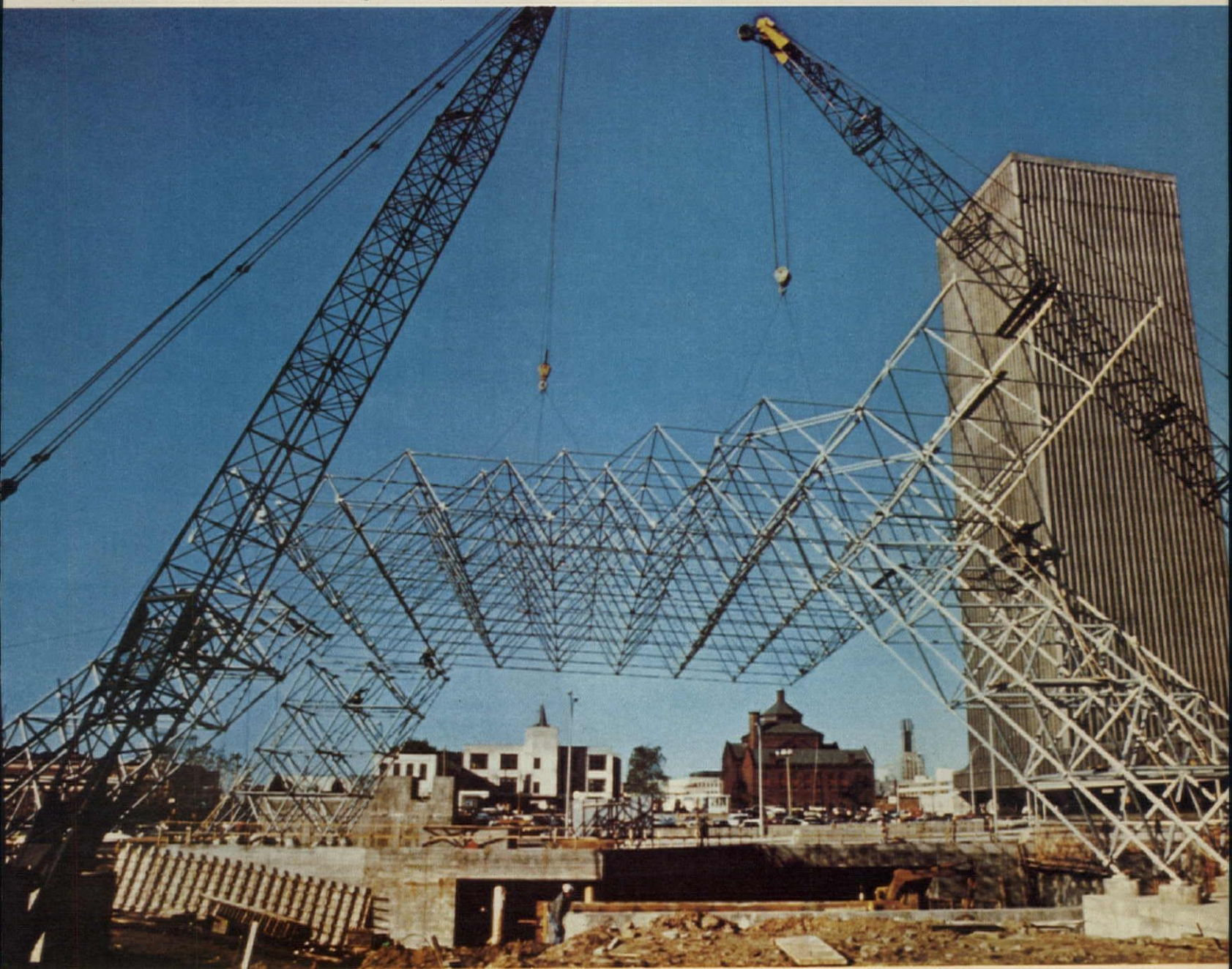
Credits

P/A thanks the following manufacturers for technical assistance. Each is identified by product as 1 materials and/or subsystems, 2 utility buildings, 3 design/build performance specifications fabrication, 4 pre-engineered buildings. American Buildings Co. (4), P.O. Drawer A, Eufaula, Ala. 36027; American Steel Building Co. (4), P.O.B. 14244, Houston, Tex. 77021; Armco Steel Corp. (4), Middletown, Ohio 45043; Arrow Group Industries, Inc./Chromalloy-American Corp. (2), 100 Alexander Ave., Pompton Plains, N.J. 91730; Atlantic Buildings Systems, Inc./Atlantic Steel Co. (4), P.O.B. 1714, Atlanta, Ga. 30301; Bethlehem Steel Corp. (1), Bethlehem, Pa. 18016; Butler Manufacturing Co. (4), P.O.B. 917, Kansas City, Mo. 64141; Capitol Products Corp./Ethyl Corp. (2), Carlisle Pike, Mechanicsburg, Pa. 17055; Childers Manufacturing Co./OHD Corp. (1), 3620 W. 11, Houston, Tex. 77008; Haven Busch Co. (3), 3443 Chicago Dr., SW, Grandville, Mich. 49418; INRYCO, Inc./Inland Steel Co. (4), Box 1009, Melrose Park, Ill. 60161; International Steel Co. (2), 1321 Edgar, Evansville, Ind. 47707; Lear-Siegler, Inc./Cuckler Buildings Div. (4), Box 346, Monticello, Iowa 52310; Macomber, Inc./Sharon Steel Corp. (3), P.O.B. 8830, Canton, Ohio 44711; Marathon Metallic Building Co./Marathon Manufacturing Co. (4), P.O.B. 14240, Houston, Tex. 77021; Mitchell Engineering Co./Ceco Corp. (4), 5601 W. 26, Chicago, Ill. 60650; Pascoe Steel Corp./Amcord, Inc. (4), 610 Newport Center Dr., Newport Beach, Calif. 92660; Republic Buildings Corp./Republic Steel Corp. (1), P.O.B. 6778, Cleveland, Ohio 44101; H.H. Robertson Co. (1), 2 Gateway Center, Pittsburgh, Pa. 15222; Elwin G. Smith Div./Cyclops Corp. (1), 650 Washington Rd., Pittsburgh, Pa. 15228; Star Manufacturing Co. (4), P.O.B. 94910, Oklahoma City, Okla. 73109; Steel Span Building Systems (4), 140 Wood Rd., Braintree, Mass. 02184; Stran Div./National Steel Products Co. (4), P.O.B. 40490, Houston, Tex. 77040; U.S. Steel Corp. (1), 600 Grant St., Pittsburgh, Pa. 15230; Wheeling Corrugating Co./Wheeling-Pittsburgh (1,2), 1134 Market St., Wheeling, W.V. 26003. Also thanks to: Metal Building Manufacturers Assoc., 2130 Keith Building, Cleveland, Ohio 44115.



Above compares performance specs with pre-engineering; left: Fodrea School, Columbus, Ind., Architect: CRS; right: Gardley Corp., Enfield, Conn., Architect: John Morgan, Neecon Design Corp.

Below: Lawrence Halprin's "Tribute to Man," Rochester, N.Y. is pre-engineered frame.



Discriminatory land use regulations

Bernard Tomson and Norman Coplan

A recent ruling by the Supreme Court of New Jersey declared invalid a township zoning ordinance that economically excludes a segment of the population.

The need for housing economically suitable for low and moderate income families is reflected in the challenges which are being made to the land use regulations in many communities throughout the United States. There are several such pending actions in California, New York, Connecticut, and other states. The underlying theme of these attacks is that upper-middle class residential communities, in seeking to preserve the amenities of suburban living, have adopted land use restrictions which result in excluding low income or minority groups. The basic argument is that a zoning ordinance which requires a substantial minimum acreage for the construction of a residence and/or which established excessively high standards in respect to the quality or size of residences (houses and apartments) makes it impossible for low income families to live within their financial means in the communities, thereby making the ordinance unconstitutional.

The Supreme Court of the State of New Jersey has recently ruled that a township zoning ordinance which had been challenged by minority and low income groups was invalid because its economic effect was to exclude substantial segments of the area's population from residence in the town (*Southern Burlington County N.A.A.C.P., Camden County C.O.R.E., Camden County N.A.A.C.P., et al. v. Township of Mount Laurel*). This decision has significance for the country at large and if followed, could result in a revolution in our land use system of regulation. As pointed out by the *New York Times*, in referring to this decision, it has a potential for undermining the legal foundation on which suburbia is built.

The township involved in the case was Mount Laurel, an area of approximately 22 sq miles, or about 14,000 acres. In 1950, this township had a population of 2817 people and was primarily a rural agricultural area with no sizeable commercial or industrial enterprises. The population lived in individual houses scattered along country roads. After 1950, there was residential development and some commerce and industry began to come in. By 1970, the popu-

lation of the town had increased to 11,211 people. The development of the township was spurred by the construction of highways which resulted in the town being located strategically from the standpoint of the transport of goods and people.

Under the prevailing zoning ordinance, 29 percent of the township is zoned for industry. The industrial districts are located adjacent to the highways. Only a small portion of this area had actually been developed for industrial purposes and it was estimated that if it was fully developed for that purpose, over 43,000 industrial jobs would be created. This land cannot be used for residential development. The zoning regulation sets aside approximately 169 acres, or a little over 1 percent of the town for retail business. The balance of the land area, approximately 10,000 acres, is available for residential development under various residential zones.

There are two major residential zones. One of these, comprising about 2500 acres, requires a minimum lot area of 9375 sq ft, a minimum lot width of 75 ft at the building line and a minimum dwelling floor area of 1100 sq ft if a one-story building, and 1300 sq ft if 1½ stories and higher. This zone has been substantially developed and only a few acres remain for further development. The second major residential zone comprises over 7000 acres—slightly more than one-half of the total municipal area. The ordinance requirements in this zone are substantially higher. The minimum lot size must be about ½ acre (20,000 sq ft), lot width at the building line must be 100 ft and the minimum dwelling floor area is the same as the other residential zone. Approximately 4600 acres in this zone was available for housing development, as the largest part of the zone had been used for agricultural use.

The zoning regulations of the township also set aside an area for "cluster development" under regulations resulting in dwellings comparable in character and value to those in the other residential zones. Another area was set aside under the zoning ordinance for "planned unit development." The projects approved for this area by the town were basically residential developments having some variety of housing and some retail establishments. The objective, however, was to provide a development which would attract "a highly educated and trained population base" and the apartments permitted in this development having more than one bedroom were severely limited and no school children were permitted to occupy any one-bedroom apartment. Still another area of the township was set aside to meet the needs of "senior citizens." The requirements for the development of this area was such that the housing, whether it be townhouses, cooperatives, or condominiums, would be beyond the means of low- and moderate-income retirees.

The Court pointed out that regardless of motive, the land use regulations resulted in excluding from the municipality not only the poor, but also young and elderly couples, single persons, and large growing families not in the poverty class. It is in this context, stated the Court, the issue as to the validity of the zoning regulations must be considered.

Our discussion of the Court's decision in this precedent shattering case will be continued in our next column. □



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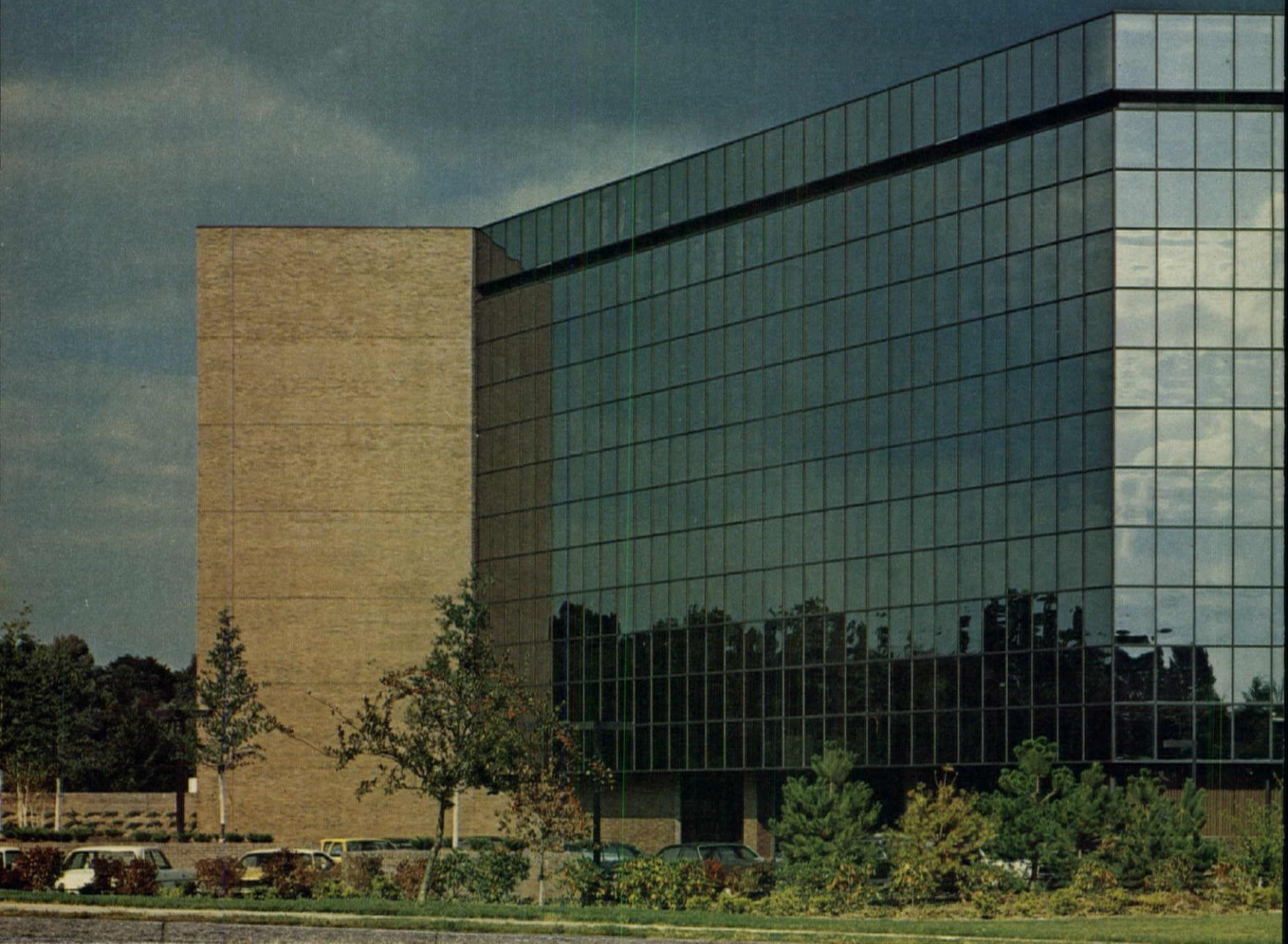
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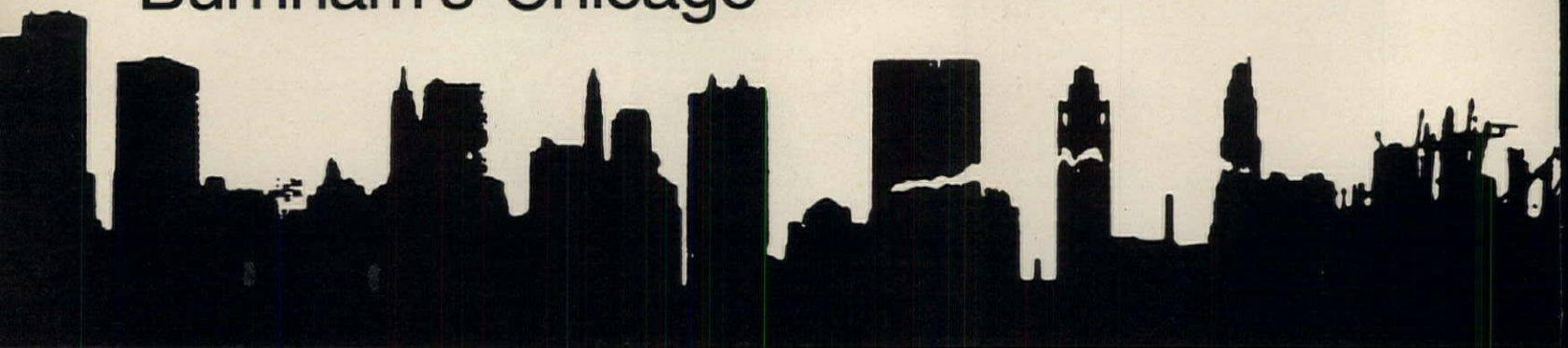
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Burnham's Chicago



Burnham of Chicago: Architect and Planner by Thomas S. Hines, New York, Oxford University Press, 1974, 445 pp., 150 illus., \$19.50.

Reviewed by Leonard K. Eaton, professor of architecture, University of Michigan, Ann Arbor.

For several years now historians have been trying to retrieve the sullied reputation of Daniel S. Burnham from the blackening given to it by Louis Sullivan. Ever since Sullivan's characterization of Burnham as "obsessed by the feudal idea of power," he has been a villain in the historiography of the Chicago School. Now comes Thomas S. Hines, a young historian at UCLA, with a volume intended to redress the balance and do that extremely complicated thing, get at "The Real Burnham." His task is undoubtedly additionally complicated by the attention which has lately been given to Sullivan's gifted partner, John Wellborn Root, in Donald Hoffmann's excellent books. But Hines, who, it will be recalled, is the man who demonstrated conclusively that Frank Lloyd Wright had been systematically lying about his birthdate all through his mature life, is equal to the job. This is as good a book on Burnham as we are likely to get or need for quite a few years.

We may begin with the query: What does Hines tell us about Burnham that we can't find out from Charles Moore's massive two volume biography of 1921? The answer is: a great deal. Moore wrote a eulogy, while Hines brings to his work all the insights which we might expect from a young historian well trained at one of the best graduate schools (Wisconsin). In passing we may note that he has consulted all the available manuscripts and secondary sources and obviously had the cooperation of the family, who did not expect a whitewash job. But we have learned to expect more than conventional digging from our historians, and Hines gives it to us. Taking a cue from Erik Eriksen, he stresses the importance of Burnham's prolonged adolescence for his later development. He also has much to say about the effect of the family's Swedenborgian religious credo and belief in Anglo Saxon ethnicity. And he does a superb job of placing Burnham in relation to the outstanding personalities and political and social movements of his time. Briefly, he classifies his subject as an admirer of Theodore Roosevelt and a progressive republican; it was his sense of mission which led to Burnham's involvement in the planning of Manila and Baguio, which ultimately were

among his most creative endeavors.

For students of the Chicago School the most controversial passages in the book will undoubtedly be those in which Hines discusses Burnham's relationship with Root. In these pages he states that Burnham was, in fact, as responsible for the quality of the firm's buildings as his partners. For the Rookery, to take a case in point, the most important features were "... largely Burnham's contributions, displaying his talent for conceptualizing large general plans" (p. 57). The essence of the position, of course, is that it attacks the long-cherished American myth of the solitary genius-designer. This has been an article of faith among architects who have taken to heart Sullivan's strictures on Burnham's belief in organization and admired Wright's arrogant individualism. The plain truth of the matter is that large and complex buildings require the co-operation of many individuals in a large office. As Grant Hildebrand has remarked, Albert Kahn couldn't have accomplished what he did with a small staff. Since the drawings of Burnham and Root have largely been lost, it is unlikely that any one will ever determine with precision what the division of responsibility was within the office.

Hoffmann's account of the genesis of the Monadnock leaves one with the impression that it was a lonely struggle on Root's part. Harriet Monroe's contemporary version gives Burnham quite a lot of credit. Hines is probably at least partially right in accepting her story, but no one will ever know the whole truth. Every one, however, will agree that after Root's death in 1891 Burnham lost his aesthetic sense of direction and that the productions of D.H. Burnham Co. are a mixed bag. Some good office buildings came from it, and the Butler Bros. Warehouse of 1913 is no less than magnificent, but one comes away with the impression that the Grand Neo Classic Style was less congenial to the firm than the older commercial idiom. Although Burnham continually sought out the best designers, his men were never of the same quality as those at McKim, Mead, & White. It is hard to think of a Burnham building in which one finds the true luxuriance of urban space that we used to experience in New York's Pennsylvania Station.

Burnham as planner is, as almost every one has noted, another story. In this area he had true genius, and Hines goes into excellent detail on his contributions to civic de-

[continued on page 80]

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We've collected six of these techniques in one comprehensive booklet that tells when to use them and how to use them. We'd like you to have it. It's free. Ask for it from your reproduction service, or write: Du Pont Company, Room 24031, Wilmington, Delaware 19898.

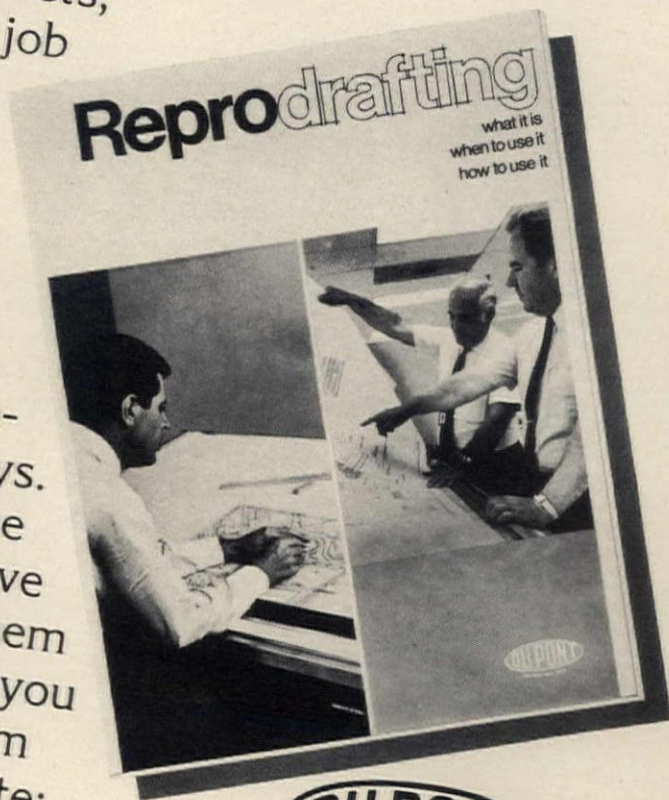


Photo Products

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The Amos drawer interchangeability factor means that any drawer of any given size will immediately fit and work perfectly in any opening designed and built for that size. Fitting and refitting can cost thousands of dollars. Amos drawers never require individual fitting.

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Books continued from page 78

sign in Cleveland, San Francisco, Washington, D.C., and most important of all, Chicago. His discussion of the civic center in Cleveland is particularly interesting, since it shows him co-operating closely with Tom Johnson, the city's famous reform mayor. Historians always want to believe that the Grand Neo Classic Style is to be identified with political reaction. While Burnham's results will scarcely bear comparison with his model (the Place de La Concorde), the story is important because it throws light on the naivete of the customary assumption. The Burnham Plan for Chicago was certainly a classic because it was the first in the United States to reach beyond the city itself and encompass the entire region. Here Hines is amplifying the findings of other scholars, especially Carl Condit. Again, his major contribution is in his analysis of the manner in which Burnham's planning both strengthened and contradicted the truly "progressive" movements in American life. "While basically a supporter of capitalistic individualism," writes Hines, "he saw the need—perhaps in the interest of conserving that system—for greater collectivization and co-operative sacrifice among individual citizens." Hence there was a need for planning, though it might diminish the rights of the individual.

For this reviewer the most fascinating aspect of the entire book was the picture which it conveyed of Burnham as an individual. One had previously had the idea that Burnham was a large, handsome salesman-executive type with a miraculous gift for planning of the Beaux Arts variety. It develops that he was a far more complex personality than this stereotype would suggest. Of course we knew that his acquaintances in the "power structure" of his time ranged all the way from senators, governors, and industrial tycoons to "Bathhouse John" Coughlin, who named a racehorse after him. This is to be expected in a man who, more than any other architect in our history, knew how to manage the levers of power. But how many of us were aware that Lord Bryce, Harvard's President Eliot, and Bernard Berenson were among his guests? They were not mental welterweights, and they all found Burnham interesting. Perhaps it was his magnanimity which attracted them; surely he was as generous-minded a man as we have had in the history of American architecture. In view of Sullivan's later characterization of Burnham, it is interesting to note that "Uncle Dan" was apparently among those who helped Louis out when he was on his uppers. In a certain sense Burnham's later years of public service without fee were in a great American tradition. D.H. Burnham Co. was perhaps a modern version of Benjamin Franklin's printing shop, which allowed him to retire from business at age 40 and devote himself to public affairs. In short, Burnham was a complex and fascinating personality. It is no wonder that Harriet Monroe wanted to write a novel built around his career.

Finally, and unhappily, it remains to be noted that the production of the book leaves much to be desired. The paper is of poor quality, and the reproduction of the illustrations is uneven. Perhaps we can expect no better in this day of soaring publishing costs, the reader should not be put off by the format. *Burnham of Chicago* is important. [continued on page 82]

Devoe announces six new ways to avoid solvent hazards, fumes and downtime.



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Books continued from page 80

Shop Fronts by Jacques Debaigts. New York, Architectural Book Publishing Co., 1974, 192 pp., illus, \$36.

From among the capitals and major European cities, the author has chosen the most interesting, varied, and successful shop fronts. In his choice he has concentrated on those that give a key to the kind of shop that is being presented, that is, those whose image gives information. The author also considers a shop's integration into the surrounding architecture, its materials and originality of concept. The book concludes with illustrations of many useful and practical solutions to shop signs.

Indigenous African Architecture by René Gardi. New York, Van Nostrand Reinhold Co, 1975, 249 pp., illustrated, \$32.50.

In this pictorial and narrative guide to traditional building and lifestyle in West Africa, building techniques, the versatility and the beauty of traditional African indigenous architecture are described in detail. The author shows how African architecture still reflects people's lifestyle; he points to the problems of making improvements without endangering the beauty and appropriateness of the vernacular architecture, he discusses the effects of "progress" upon architecture, and the loss of tradition that often accompanies change in a society.

Documents

[The documents listed below are available from the associations and agencies cited. Requests for such documents should be directed accordingly.]

The Architectural Index. P.O. Box 1168, Boulder, Colo., 80302. \$8.

The 1974 edition of this invaluable guide to everything published in the leading U.S. architectural and interiors press is now available. Entries are cross-indexed by location, by general building type, and by architect or designer to provide a complete reference guide to information on a specific building, a building type, materials and methods of construction, the architecture of one region or the work of one person or firm.

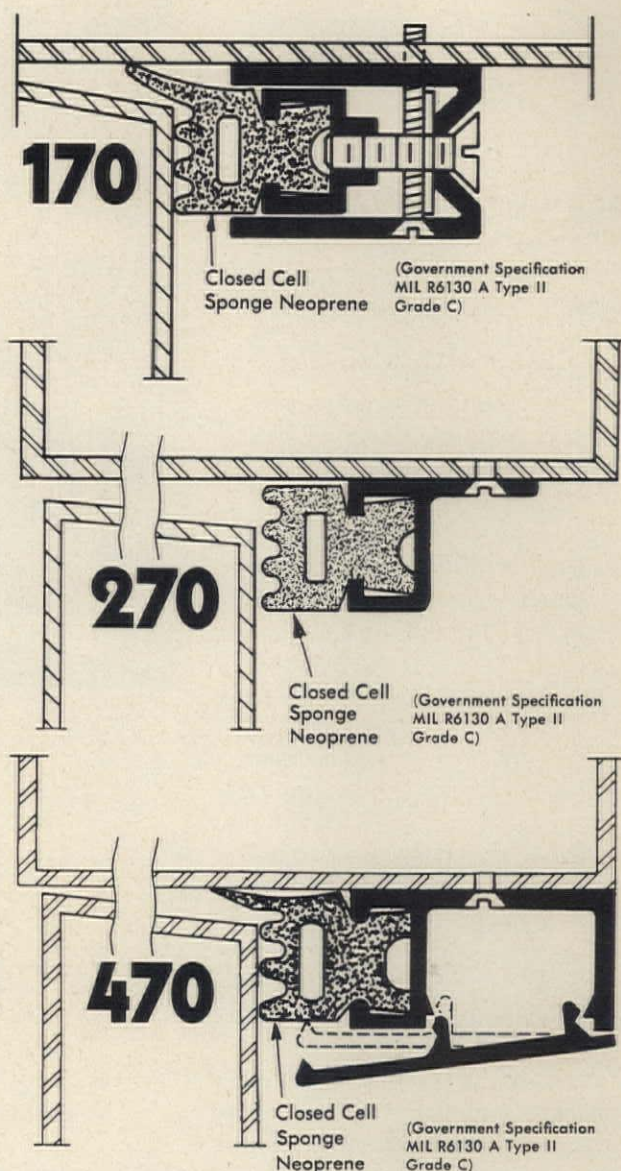
Federal Environmental Impact Statements Related to Buildings, 1973-1974, by Dr. Kaiman Lee, AIA. *Environmental Design & Research Center*, 940 Park Square Bldg., Boston, Mass., 02116. 102 pp., \$30.

Because many in the building professions have voiced grievances about not having one source that contains a listing of environmental impact statements related specifically to buildings (as opposed to highways, bridges, airports, etc.), this reference work has been compiled to provide the reader with easy access to existing environmental impact statements. One hundred ninety carefully selected statements related to buildings are listed in alphabetical order, in order of building type, in order of agencies responsible for the submission and review of environmental impact statements, and in numerical order (by numbers assigned by the National Technical Information Service and the Environmental Law Institute).

Old problems. New solutions.

When it comes to lightproofing and soundproofing, warped or unevenly hung doors pose a problem. A problem for which Zero offers a number of effective solutions. Three are shown on this page: Zero's Nos. 170, 270 and 470 adjustable door stops. (The last comes with a snap-cover that hides the screw-mounting hole completely!)

For detailed, illustrated data, write for our new, catalog—and stop your problems before they start!



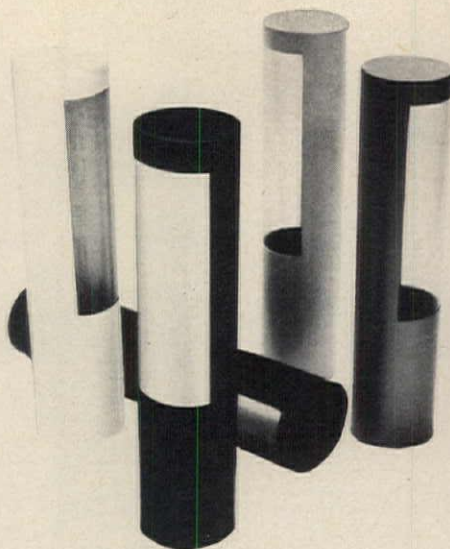
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Products and literature



Outdoor lighting units



Transit shelter

Outdoor lighting unit is said to provide 10 times the light of an incandescent and three times the light of a mercury unit for each watt consumed. A low pressure sodium lamp is used in an anodized or painted aluminum housing for mounting on poles, walls, canopies or the ground. Voigt Lighting Industries, Inc.

Circle 101 on reader service card

Transit shelter. Constructed of aluminum frame in natural or black duranodic finish, roof and sides are glazed with 1/4-in.-thick sheets of gray tinted acrylic or polycarbonate. Sides of the shelter are bolted to one-ft-high concrete blocks. A one-ft space between the rear of the shelter and the ground prevents a buildup of snow, dirt, paper, and debris in the shelter states maker. Size is approximately 8 ft high by 10 ft wide by 5 ft deep. Tubular Products.

Circle 102 on reader service card

Litter receptacle. The dimensions for the 30 gallon unit are 25"x25"x36" high. A wide variety of graphic panels are available, including interchangeable side panels in seven standard environmental messages, six solid colors, simulated wood grain, and 15 exposed aggregate surfaces. Units may be used in or out of doors, may be purchased assembled or knocked down, and they use disposable bag liners. Clean City Squares, Inc.

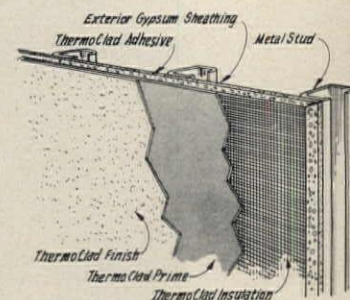
Circle 103 on reader service card

Ventilation grille. Extruded aluminum unit is available in many sizes and is clear anodized aluminum and satin finished. Vemaline Products Co., Inc.

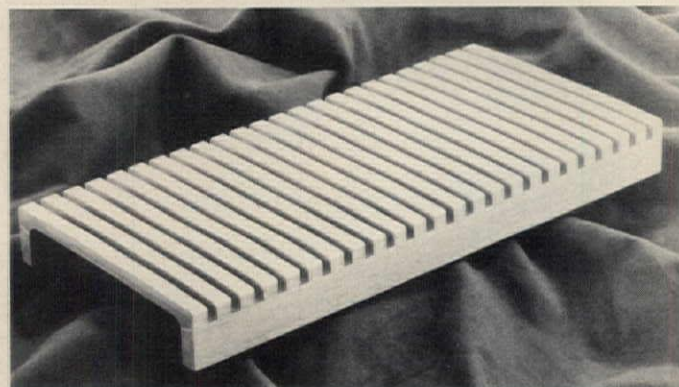
Circle 104 on reader service card



Litter receptacle



Exterior wall insulation



Ventilation grille

Exterior wall insulation. Thermoclad consists of a styrene foam insulation to which a fiberglass mesh has been laminated for strength and crack-resistance; an adhesive to adhere the insulation to the underlying wall surface; a prime coat which contributes strength and supplies a base for the finish coat. With the insulation on the outside, the space consumed in furring out and insulating the interior is saved, states maker. Request publication TC-1. W.R. Grace & Co.

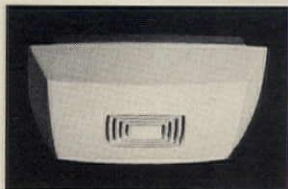
Circle 105 on reader service card

Foam insulation that contains no polyurethane or polystyrene is inorganic and non-toxic, and bugs, insects, and rodents cannot exist in its presence. Rapco Foam is discharged from a patented gun into virtually any kind of floor, wall, or ceiling cavity, or flat against a vertical wall surface, to the thickness desired. It flows up or down, around and behind pipes, wires, other impediments, fills all voids and sets in a min. Rapperswill Corp.

Circle 106 on reader service card

[continued on page 86]

Unique answer to multi-family fire detection.



BRK's new MCP741 Master Control Panel and advanced ionization detectors solve many of the special problems of apartment house fire detection.

Basically, a BRK system consists of at least one ionization detector in each apartment, and a centrally located Master Control Panel, to which the ionization units are connected by a simple 2-wire circuit. The ionization detectors will sound an alarm in the affected apartment, as well as a general alarm at the Panel and throughout the building.

Each ionization detector has terminal strips to which heat sensors and rate-of-rise detectors can be connected. There's a *battery conversion* feature, too, allowing the ionization detector to be cut out of the building's system and operated on battery power alone. If an apartment has too many nuisance alarms that disturb the whole building, its detector can be placed on battery operation, confining alarms to that apartment only.

To insure each apartment's privacy, while allowing tests of its detector, BRK has key-operated test stations for hallway location. The key not only tests for "power on", but also checks the unit's circuits and sensitivity. Hallway pull boxes are also part of the BRK system, and are connected to the MCP741 Control Panel. This advanced solid-state panel accommodates up to 8 zone modules, each capable of handling up to 60 detectors. Overall, the system can accommodate hundreds of ionization detectors, plus an almost infinite number of heat and rate-of-rise detectors and pull boxes.

Other features include remote annunciation, battery backup power and float recharge system in the control panel, UL listing of detectors and panel, easy installation, and reliable operation. For more facts write or phone BRK Electronics, Div. of Pittway Corp., 525 Rathbone Ave., Aurora, Ill. 60538. Phone: (312) 892-8721.



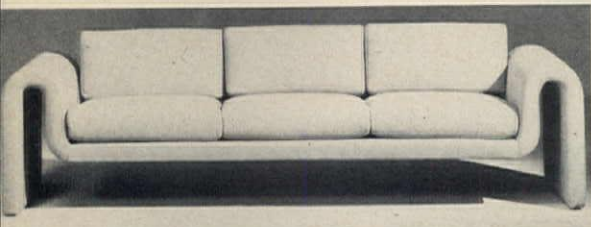
BRK
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First in Fire Warning

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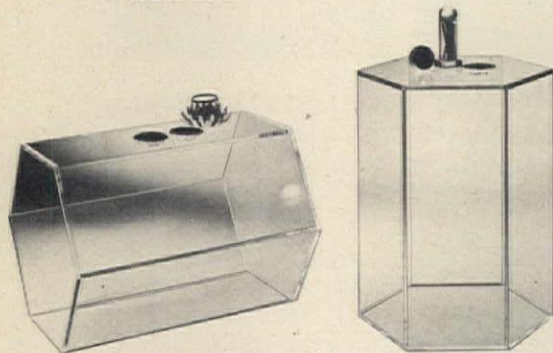
Products continued from page 84



Ribbon sofa



Desk chair



Acrylic furniture modules

Acrylic furniture modules. Three basic forms, a 27"x16"x16" right angle, and two hexagonals 27"x18" and 16"x16" are one-half-inch thick clear acrylic. Bronze panel adds support and contrast to the right angle. Coffee and card tables, consoles, desks, sideboards, dining tables, pedestals, and plant stands are formed from these basic shapes. Karmel Plastics, Division of Dura Plastics of New York, Inc.

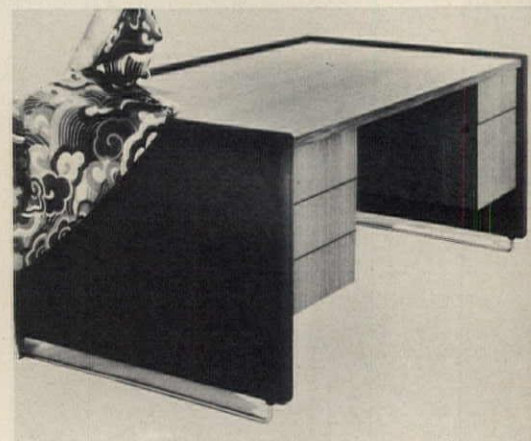
Circle 108 on reader service card

Ribbon collection of furniture uses steel ribbon frames for its basic construction, provides strength to the unit, and contributes to the self-leveling effect. Brayton International.

Circle 107 on reader service card

include untufted upholstery and arms without upholstered inserts. Polished cast aluminum base has a swivel tilt mechanism with adjustable height and tilt tension. Double rollers are concealed by polished chrome cap. Thonet Industries, Inc.

Circle 109 on reader service card



Upholstered desk has panels that can be covered with materials to match or contrast with other upholstered pieces in office. JG Furniture Co., Inc.

Circle 110 on reader service card

[continued on page 87]

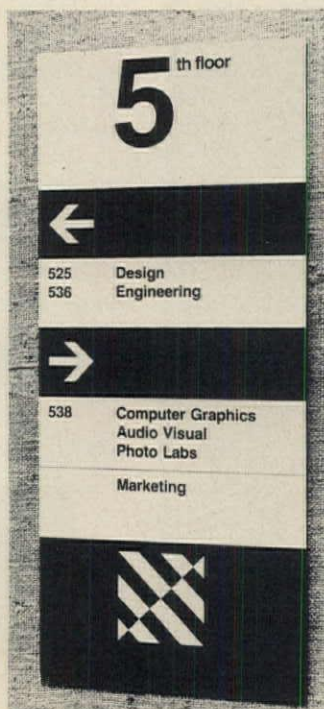
Desk chair. Part of the executive desk series, this low back chair also comes in a high back version. Chair frame and wrap-around arm unit are made of molded ply oak face veneers. Options

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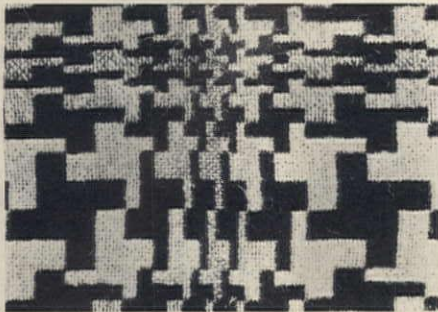
Whether you're modifying an existing building or designing a new one, accessibility to the handicapped is important. PORCH-LIFT offers you a simple, economical solution. It's a safe wheelchair lifting platform permanently anchored beside the steps using a minimum of space. Motor and mechanism are enclosed in a weather-proof housing. "Call-Send" controls are key operated, and it runs on 110 volt current. It's available to fit varying heights and is shipped ready for installation.

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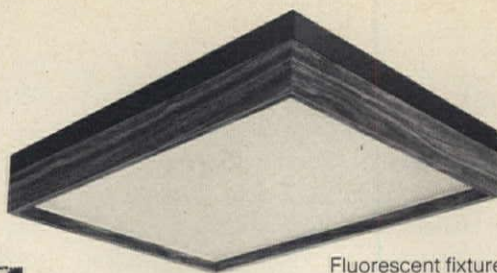
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Circle No. 312, on Reader Service Card



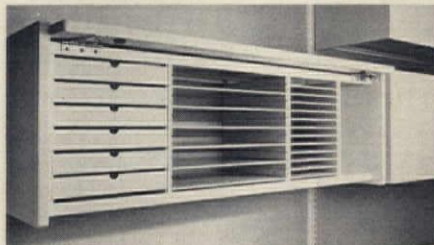
Irish woolens. Power loomed in Ireland of 100 percent virgin wool, "Tara Plaid" shown is a double cloth suitable for all types of seating upholstery. It has a 5 in. repeat in both directions and colors are black, gold, clay, blue, or brown each containing four or five different variations. Also available is a minuscule check pattern in a range of color tones from heather white through pale and medium gray and slate. Isabel Scott Fabrics.

Circle 111 on reader service card



Fluorescent fixture

Inner cabinet storage



Inner cabinet storage system is composed of vertical and horizontal parts which can be arranged to suit the specific needs of the user, can be easily changed, added to, rearranged, and reconfigured, states maker. Molded ABS plastic vertical panel has dimensioned slots on the sidewalls which are designed to accept a variety of steel shelves and drawers of varying widths, depths, and heights. One-inch nominal spacing between the slots will accommodate up to 12 shelves or 6 two-inch

drawers. Cam device locks the panel into position between the upper and lower shelves. Westinghouse Architectural Systems Division, Westinghouse Corp.

Circle 112 on reader service card

Fluorescent fixture. A surface mounted unit features a permanently bonded, textured walnut vinyl covering on 1/2-in.-thick particle board, an acrylic prismatic lens, a matte black steel housing, and it can be mounted singly or in continuous rows. Sizes are 1'x4', 1 1/2'x2', and 1 1/2'x4' in two- or four-lamp versions for either 120v or 277v operation. Guth Lighting.

Circle 113 on reader service card

Literature

Handrails. Rust and corrosion resistant and electrically non-conductive system meets OSHA regulations. Company offers a complete system design service or makes handrail components for users who wish to do own design work. Brochure. Fibergrate Corp.

Circle 201 on reader service card

[continued on page 88]

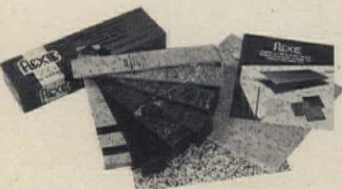
FLEXCO^{T.M.}

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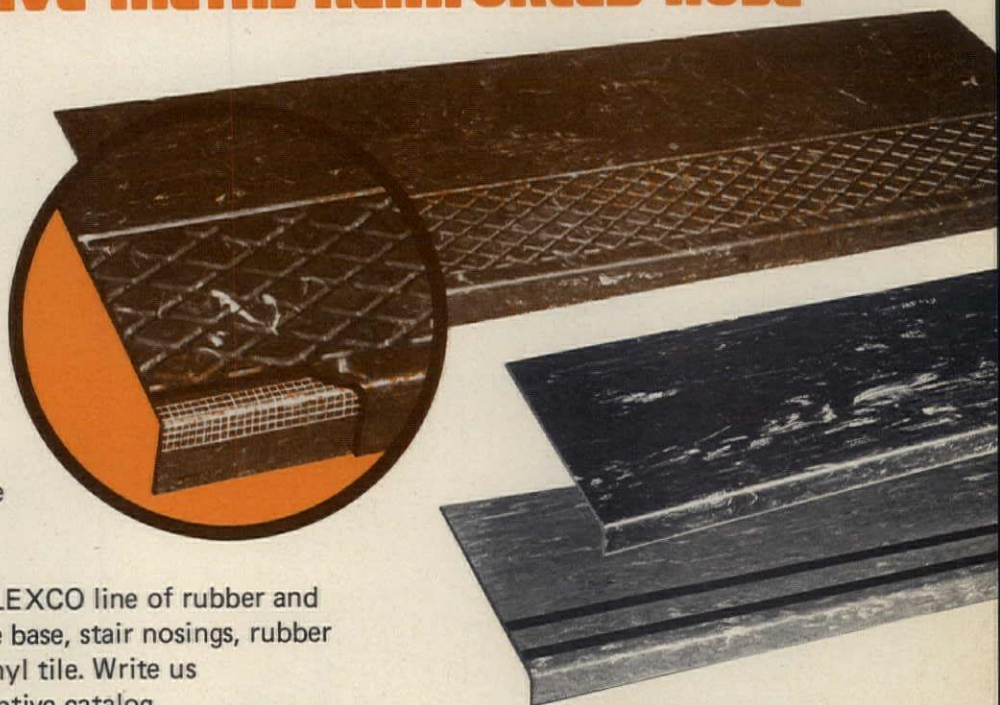
FLEXCO Rubber Treads are made of tough high grade rubber in 1/4" and 1/8" gauges! Diamond design safety treads, smooth treads and smooth design with Carborundum Safety Strips are made in a full range of sizes up to 72" long. Eight modern color styles.

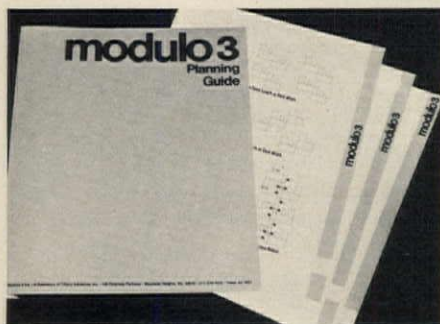
You should know more about the FLEXCO line of rubber and vinyl stair treads, cove base, stair nosings, rubber tile and conductive vinyl tile. Write us for samples and descriptive catalog.



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Planning guide. Includes space planning solutions for designers, architects, and specifiers, and uses a full range of illustrations in 1/4-in. or 1/8-in. scale which can be traced or reproduced as an aid to preliminary planning. Modulo 3 Inc.

Circle 202 on reader service card

Expansion joint cover. Brochure gives selected architectural details, code acceptability, and physical properties of weathertight metal and exterior vinyl cover. A sample guide specification is included. Grefco, Inc.

Circle 203 on reader service card

Deck, floor and siding systems are covered in a 32-page catalog. Products include roof and floor decks, cellular deck, long span deck, and acoustical deck. Catalog shows cut-away illustrations, dimensions, section properties, load span tables, accessories, typical construction details, and specifications for steel floor and roof deck. Request Catalog 75P3. Peterson Construction Products, Elwin G. Smith Division, Cyclops Corp.

Circle 204 on reader service card

Elevators. Series consists of two 2000-lb, three 2500-lb, and two 3000-lb versions of various speeds with a choice of three different customized interiors, featuring four panel selections of wood or leather grain patterns.

Three basic types of control systems are offered: the one-car, two-car or three- or more-car operations. Each is described in detail. Dimensioned outline drawings, sketches, and photographs of the systems in use are included in four-color, 17-page brochure. U.S. Elevator.

Circle 205 on reader service card

Built-up roofing/roof insulation.

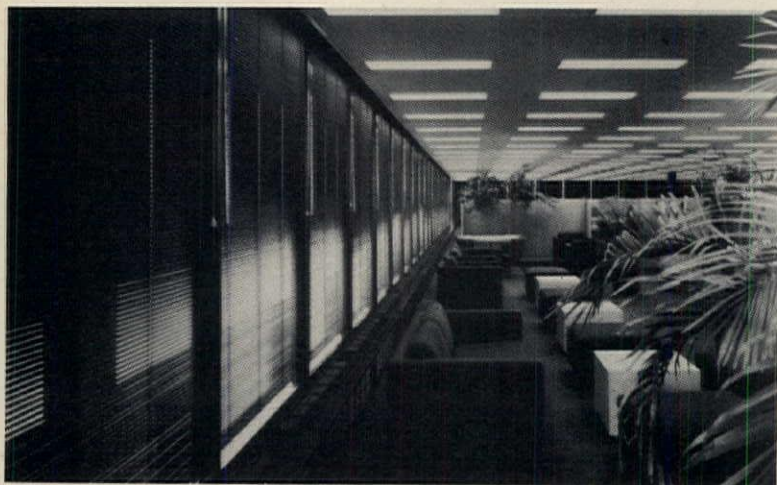
Seven different kinds of built-up roofing materials, roof insulation boards, and a roof taping system for the three climatic areas are outlined in a four-color, 36-page brochure entitled "fiberglass Reinforced Built-Up Roofing Systems." It contains reference specifications, design factors, and general requirements for proper installation of the materials. Application procedures for insulated decks, non-nailable decks and fiberglass insulated decks are explained. A 16-page color brochure describes energy savings and cost benefits gained from the use of roof insulation. Brochure, "Roof insulation Systems," describes types of roof insulation, gives specifications, and application procedures. Owens-Corning Fiberglas Corp.

Circle 206 on reader service card

Designer's Survival Index. A pin-up wall poster showing about 80 percent of the line is available to architects, designers, and specifiers. Stendig, Inc.

Circle 207 on reader service card

[continued on page 89]



A beautiful way to cut HVAC costs.

Levolor Riviera Blinds

The most functional shading device ever invented is now also the most beautiful.

Levolor Riviera's keep out sun and glare with the turn of our Magic Wand (You can't "over-turn" either, thanks to the exclusive "Guardian Tilter"). Let your imagination soar...you have more than 100 colors to choose from. Send for our complete manual. Levolor Lorentzen, Inc., 720 Monroe St., Hoboken, N.J. 07030.



*Guardian Tilter is a trademark of Levolor Lorentzen, Inc.

Circle No. 330, on Reader Service Card

Introducing the typist turned drafting assistant.

Your typist can save you hours of drafting time by using Stanpat blank sheets and special typewriter ribbons. Notes and legends are quickly typed and applied to any drawing. That's it. Your drawing never leaves the working stage for tedious lettering...not even for a minute. Thanks to Stanpat, draftsmen are not required for routine work and expensive drafting typewriters are not needed at all.

Let Stanpat's special material turn your typist into a drafting assistant and save yourself a lot of dollars. Write today direct to Stanpat Products Inc. and we'll send you free samples immediately.

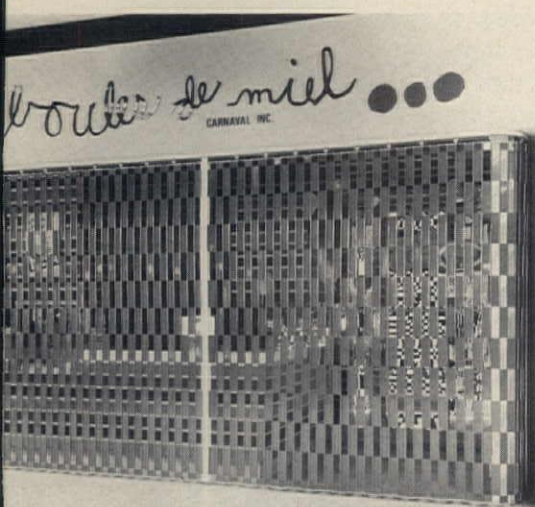




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Security grilles. Side-sliding for store fronts, malls, and institutions, grilles have full base security with no floor track. Available with anodized or duracron finishes or impact-resistant plastic. Can slide or bend around corners, can be custom fitted for positive security for stores, shopping malls, schools, hotels, hospitals, banks. Color catalog. Dynafair Corp.

Circle 208 on reader service card

Floor tile 16-page catalog contains full-color illustrations of all colors and patterns of vinyl asbestos and asphalt floor tile, feature strip, and cove base. Also includes general information about sizes, gauges, uses, installation, light reflectance values, and brief specifications. Azrock Floor Products.

Circle 209 on reader service card

Lighting selection guide. A comprehensive specifier's catalog for architects, engineers, and other professionals responsible for specifying lighting, it has selection tabs in loose-leaf catalog for quick reference for specific applications. Catalog is registered in the recipient's name so it may be updated as necessary. Lighting Products Division, Crouse-Hinds Co.

Circle 210 on reader service card

Architectural hardware. A complete indexed catalog of push-pull bars, kick plates, and auxiliary hardware includes data and price list. Both standard and custom hardware are available. Cipco Corp.

Circle 211 on reader service card

Graphics. A technical brochure prepared for use by architects, planners of mass transit systems, store, restaurant, and office building designers, and graphics planners of industrial plants. It covers use of acrylic in letters, signs, symbols on commercial buildings, retail establishments, airports, and other public buildings, and its maintenance. Also application of lettering and other decorations to acrylic is discussed and a section on safety when using acrylic is covered. Request technical brochure (PL-1171). Rohm and Haas Co.

Circle 212 on reader service card

Metal wall and roof systems. Forty-page catalog covers complete line and includes cutaway illustrations of exterior profiles, panel systems, dimensions, features, load span tables, and complete architectural specifications. Contains a color chart and architectural specifications on available coatings. Color photos show typical installations. Request catalog 75A17. Elwin G. Smith Div., Cyclops Corp.

Circle 213 on reader service card
[continued on page 90]

FREE FENCE SPEC KIT SAVES TIME, TROUBLE!



Invaluable for planning chain link fencing. Kit includes drawings on styles, wire gauges, gates, fittings, framework. Also includes laboratory test reports, work sheets and specifications.

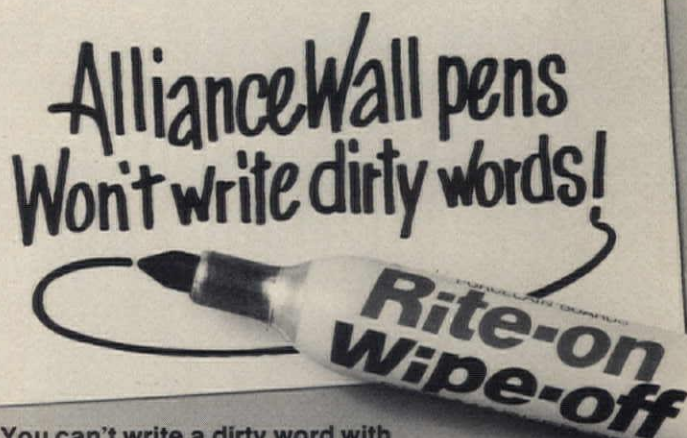
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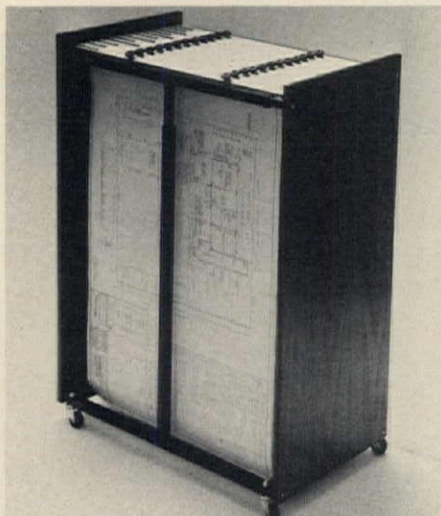
You can't write a dirty word with AllianceWall's new Rite-On, Wipe-Off System.

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Manufacturing plants in Alliance, Ohio; Okmulgee, Oklahoma; Genk, Belgium and Odense, Denmark.

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Plan file

Fire-stopping. A brochure, *High-Melt Fire-Stops Help Avoid Towering Disasters* provides technical data and specifications for fire-stopping in high-rise buildings, outlines techniques, acceptable fire-stopping materials, and areas which require fire-stopping. United States Gypsum Co.

Circle 214 on reader service card

Overlays in printed-circuit work and architectural design is explained in current issue of *The Kodak Compass*. Also discussed are film surfaces, overlay register, contact printing, and process camera methods with overlays. A chart lists materials used in overlay drafting and a diagram shows reproduction combination possibilities from originals. Request D-10-4 from Eastman Kodak Co.

Circle 215 on reader service card

Plan file system. Available in mobile and wall mounted units and both basic and pivot models are shown in 4-page brochure. According to maker, each clamp holds as many drawings or sets of plans as single flat drawer. Plan File Company.

Circle 216 on reader service card

Modular service wall centralizes building services in one location, saves space, lowers construction cost, reduces clutter. Copies of brochure are available from Halsey Taylor Division, King-Seeley Thermos Co.

Circle 217 on reader service card

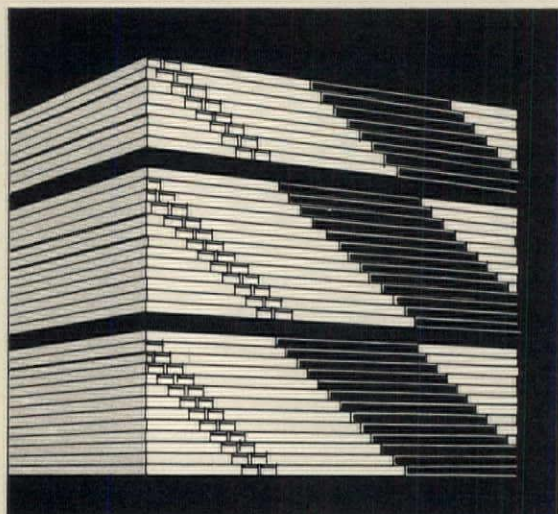
Garcy/stud. An integrated metal stud and slotted standard that teams up with conventional drywall metal studs and gypsum wallboard. The concealed slotted standard can be provided on one side or both. It has integral trim angles that facilitate wallboard application and decorating; provides a narrow opening for insertion of brackets into the slots at whatever spacing is required. Factory assembled. Request bulletins 71-GS, A16D. Garcy Corporation.

Circle 218 on reader service card

Student desk has two-drawers, is parsons-styled with mar-resistant walnut grain laminate finish, and custom-crafted for dormitory use. Company designs and custom manufacturers to exact specifications parsons tables, pedestals, parson and roll-top desks, cubes, wall units, built-ins, display cases, credenzas, and other furniture in any size, shape, color, or design. Delivery is usually within 4 to 6 weeks. Catalog is available from Danielle Products, Ltd.

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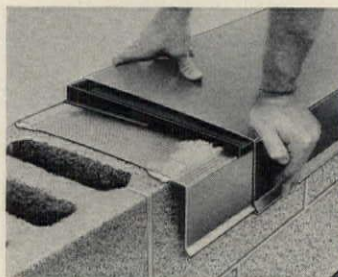
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Circle No. 328, on Reader Service Card

Notices

Appointments

Sam Carson has been named associate director of design at Charles Kober Associates, Los Angeles and San Francisco.

Douglas P. Haner has been made an associate of John Morse & Associates, Architects & Planners, Seattle, Wash.

Allen C. Pearson has been appointed a partner of M. Paul Friedberg + Partners, New York. Michael C. Cunningham was made an associate.

John Dziurman, AIA has joined Straub, Van Dine, Associates, Architects, Troy, Mich., as a principal and vice president.

Bellante, Clauss, Miller & Nolan, Inc., Scranton, Pa., has named the following associate partners: Charles J. Callaghan, Jr., director of architectural design, Scranton; David C.L. Leung, director of planning; Vyto V. Petrauskas, director of architecture, Scranton; Harvey M. Rubenstein, director of landscape architecture.

Thomas J. Caulfield has been named a senior partner of Peters Clayberg & Caulfield, San Francisco.

R. Cecil Peters, AIA has been made an associate of McCarty Bullock Holsapple, Inc., Knoxville, Tenn.

Gerald P. Adkins has been named a partner of James Hicks Adkins, Architecture & Planning, Spokane, Wash.

Eugene L. Bodycott and David N. Weed have been named associates of Odell Associates Inc., Charlotte and Greensboro, N.C.

William Albert Lewis, AIA has been appointed director of operations for Rogers & Vaeth, Inc., Columbia and Baltimore, Md.

David P. Maycock has been named associate vice president of Pearce Corporation, Saint Louis, Mo. J. Steven Coffey has joined the firm as a project architect.

Gerald Hallissy has become an officer of Hoberman & Wasserman P.C., New York City. Linda Myers has joined the firm as director of planning and development.

Donald R. Slack has been named an associate of Crowther Kruse McWilliams, Denver, Colo.

Robert C. West has been appointed president and chief executive officer of Sverdrup & Parcel & Associates, Inc., St. Louis, Mo. William H. Rivers has been elected executive vice president and chief operating officer.

New addresses

Lorenzi Dodds & Gunnill Inc., 1400, The Bank, 307 4th Ave., Pittsburgh, Pa. 15222.

Roger L. Pompei Associates and David P. Rosenthal Associates, 116 S. Royal St., Alexandria, Va. 22314.

Wimmer Yamada Iwanaga & Associates, 1401 Dove St., Newport Beach, Calif. 92660.

Diversified Design Disciplines, 5051 Westheimer, Suite 1700, Houston, Tex. 77027.

New firms

Richard N. Pierron Architect, 2428 N. Grand Ave., Santa Ana, Calif.

Donald Fredrick Evans & Associates, Architects & Planners, 206 S. Park Ave., Winter Park, Fla. 32793.

James T. Keane, AIA and Peter Edwin Sherratt, AIA have formed Keane/Sherratt, Architecture-Planning-Interior Design, P.O. Box 5786, Hilton Head Island, S.C. 29928.

David and Andrea Michaels have established Michaels Associates, environmental design and space planning firm, 801 N. Pitt St., Alexandria, Va.

James E. Sulewsky, Donald R. Cunningham and William E. Shinnick have formed Acoustical Design Incorporated, 24 Pine St., Morristown, N.J.

Fred C. Hart, former New York City Commissioner of Air Resources, has formed Fred C. Hart Associates, Inc., a consulting firm specializing in environmental and land use planning, at 909 Third Ave., New York City 10022.

John Powell, AIA has formed a consulting service providing interior planning for architects at 41 W. Ferry St., New Hope, Pa. 18938.

Frederick J. Spitz and Leaford L. Blevins, Jr. have formed Blevins & Spitz, Inc., American Bldg., Shawnee, Okla. 74801.

William L. O'Brien, Jr., AIA has established an architectural firm at 1801 E. Franklin St., Chapel Hill, N.C. [continued on page 92]

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Builder: Turner
Construction Company ...
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Mueller Roofing Service, Inc.,
Alpha, N. J.

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*Sweet's Architectural Catalog File: 4.1/LI

Like all building owners today, Nabisco, Inc. is concerned about energy — the energy it takes to heat and air condition their new World Headquarters set on a breezy Knoll in East Hanover, New Jersey. That's why Lime Crest Roofing Spar was specified for their built-up roof. For this unusual roofing aggregate reflects twice as much solar heat as gravel or slag**. It also resists weather and corrosion, defies dirt and smoke, and washes clean to stay bright indefinitely. What's more, Lime Crest Roofing Spar often costs less than other white aggregates — in some areas even less than slag!

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of Heating and Ventilating Engineers.



Lime Crest Roofing Spar

Limestone Products Corporation, Newton, New Jersey 07860

Notices continued from page 91

Organizational changes

The Cannon Partnership Architects and Engineers of Grand Island, N.Y., has formed Cannon Design Inc., a professional services company.

The Alameda, Calif. office of Goetz, Hallenbeck & Goetze has changed its name to Hallenbeck, Chamorro & Lin.

Rahenkamp Sachs Wells & Associates has opened a Denver, Colo. office at 738 Pearl St.

Building materials

Major materials suppliers for buildings that are featured this month, as they were furnished to P/A by the architects.

Chandler Village, Worcester State College, Worcester, Mass. (p. 37). Architects: Arrowstreet, Cambridge, Mass. Zip-Rib roof and exterior wall surfacing: Kaiser Aluminum Co. Brick wall surfacing: Kaiser Aluminum Co. Brick walls: Glen Gary. Fluoropon roof and wall coatings: De Soto, Inc. Vinyl asbestos tile: Kentile. Fiberglass: Owens Corning. Wood doors: Georgia Pacific. Locksets, Door closers: Corbin. Exterior paint: Devoe. Lighting fixtures: Prescolite. Heating/air conditioning: The Singer Co.

Canaday Hall, Harvard University, Cambridge, Mass. (p. 52). Architects: Ezra D. Ehrenkrantz & Associates, PC, N.Y., N.Y. Reinforced concrete foundation: Atlantic. Masonry walls: Plasticrete Co. Concrete plank floors: San-Vel Corp. Roof framing steel: Keene Corp. Exterior brick: Kane-Gonic. Carpet, pad: Burlington, DuPont. Rubber tile: Musson Rubber Co. Gypsum board: U.S.G. Standing seam terne-coated roof surfacing: Follansbee Steel Corp. Fiberglass: Owens-Corning. Windows: De-Vac. Wood and hollow-metal doors: Weyerhaeuser. Overhead doors: County Fire Door Corp. Locksets: Schlage Lock Co. Door closers: International. Spring hinges: Stanley. Crank operator: Anderberg. Panic exits: Von Duprin. Interior paint: Devoe, Sherwin-Williams. Interior lights: Lightolier. Electric distribution: Westinghouse. Water closets: American Standard. Flush valves: Sloan. Fan-coil unit heating and air conditioning: Trane Co. Baseboard radiation: Comfort Systems.

Student apartments, State University College at Brockport, New York (p. 42).

Architects: Caudill Rowlett Scott, New York, Houston, Los Angeles, Beirut. Structural steel (bar joists): Ceco. Wall panels: Lusterlite. Exterior wall surface: (Corten), U.S. Steel. Interior wall surfacing: (vinyl), U.S. Gypsum. Ceiling surfacing system: (vermiculite tile) Vermiculite et La Perlite, Paris, France. Insulation: (Fesco board), Johns Manville. Partitions (Ultra Wall), U.S. Gypsum. Windows: Alenco. Doors: Mohawk. Hardware: Arrow (locksets); Hager (hinges). Appliances: General Electric.

Job mart

Situations open

Architecture faculty: Southern California school invites applicants for teaching positions 1975/76 in architectural design, structural design and environmental controls. Undergraduate and graduate programs. Minimum requirements: master's degree, professional registration and some teaching experience. An equal opportunity/affirmative action employer. Send resume by December 1, 1975 to: Chairman, Department of Architecture, School of Environmental Design, California State Polytechnic University, Pomona, California 91768.

Faculty Position: Assistant Professor, 1 year appointment. Instruct advanced undergraduate studio dealing with problems, potentials of urban environment. Qualifications: Master's degree, architecture and/or urban

design. Supply vitae, three references. Portfolios encouraged. \$10,000 - \$11,500. Equal Opportunity Employer. Contact David Crane, Dean Rice University of Architecture P.O. 1892 Houston, Texas 77001.

Head or Chairperson, Department of Architecture: Iowa State University announces the opportunity for the position which will be vacant as of 1 September 1975 and to be filled by 1 July 1976. This is a full time, permanent position with the academic rank of Professor. Qualifications include: a) Master of Architecture or equivalent; b) Architectural Registration in the United States; c) Administrative or managerial experience, preferably in higher education; d) Teaching experience in an accredited Architectural program. Interested candidates are to send their resume and references by 30 October 1975 or write for more informa-

tion to: Rabindra N. Mukerjee, Chairman, Search Committee, College of Engineering, 104 Marston Hall, Iowa State University, Ames, Iowa 50010. Iowa State University is an Equal Opportunity-Affirmative Action Employer.

Representatives Wanted—Nationally known manufacturer of high quality furniture including desks, office systems, and seating seeks aggressive representatives for architectural, design, dealer and corporate communities. Territories available: North and South Carolina and Rocky Mountain Region (Colorado, Utah, Wyoming, New Mexico). Reply to Box #1361-845, *Progressive Architecture*.

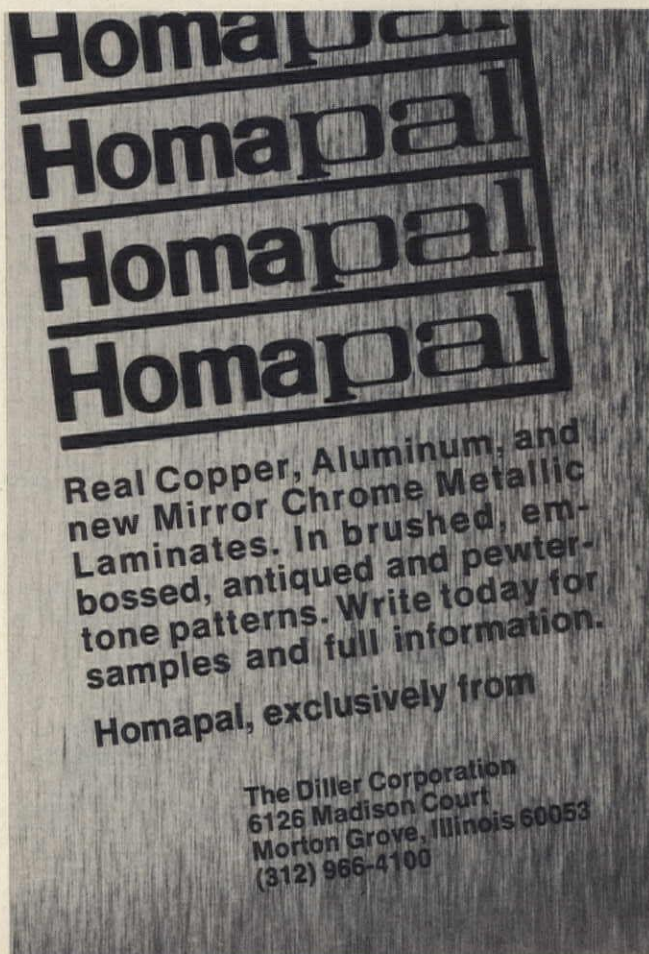
Sales Manager Custom Architectural Aluminum Products Nationally recognized West Coast Manufacturer of Custom Windows and [continued on page 94]

P/A in September

Spectacular is one word for it. The work of the Taller de Arquitectura of Barcelona is as intriguing as the individuals who form that atelier. In September, Geoffrey Broadbent, Head of the School of Architecture at Portsmouth (England) Polytechnic, will discuss the workings and the work of the group in the pages of P/A.

Also featured, in the category of interior architecture, are two projects by Ant Farm. In a media center and a kitchen addition, the team carries the craftsmanship of their House of the Century (P/A, June 1973) to new levels.

Technics for September will investigate the role of plastics in architecture, and appropriate uses for the various types of plastics. In addition, the Technics section will be showing new applications of the process of photogrammetry. Developed by a British organization, the potential uses include the creation of exquisite as-built drawings, or of topographical drawings of complex or hard-to-reach surfaces.



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Volunteer Peace Corps/VISTA: Architects/planners needed for Peace Corps projects in Latin America, Africa, Asia; VISTA projects in 25 U.S. cities. Housing projects, design of schools, hospitals, community centers, rehab, university teaching, regional planning, etc. Expenses paid, travel, medical, vacation and living. Information: Lynn Rotenberg, ACTION, ORC Box A-2, Washington, D.C. 20525.

Situations wanted

Architect: A.I.A., NCARB, 18 years experience, strong in administration and project coordination. Seeks affiliation or position with architect, engineer, or developer. Reply to Box #1361-813, *Progressive Architecture*.

"Architect — B.S. and Bach. of Architecture, Family, 33, NCARB, with 5½ years experience in all phases of small office practice—familiar with upper Midwest and Southwest—sensitive to Symbolic Design—Desires a challenging position in larger office with team approach—References available." Reply to Box #1361-847, *Progressive Architecture*.

Architect: 28, married, B.S. Arch; 6 yrs. diversified experience, project coordination from design to construction. Looking for non-drafting position with growth potential. Interests range from design, development, teaching, planning, research, or administration. Conscientious, energetic, responsible. Prefer East, but will relocate. Resume and references available. Reply to: Box #1361-848, *Progressive Architecture*.

Architect, 33, extremely interested in coordinative planning and design of community facilities in developing countries. Open to other challenging opportunities. B. Arch.; M. Urban Planning; MBA. Travelled, worked, & studied in Europe and Far East. 9 years experience in design, management. Reply Box #1361-849, *Progressive Architecture*.

Architectural Designer: B. Arch., 35, Family, 8 years experience of Design & Production in large industrial & Commercial Projects. Seriously interested in a position with Future career advancement. Prefer New York, New Jersey or Connecticut area, but will relocate for the right opportunity. Resume on request. Reply Box #1361-850, *Progressive Architecture*.

Architectural Designer, Draftsman, Delineator: Married, children, 20 years total involvement, all building types. Desire versatile opportunity with mature office, quality standards. New York State or New England area. Reply to Box #1361-851, *Progressive Architecture*.

Landscape Architect: Masters degree, licensed in a number of states, diversified experience including management, 11 years professional practice, seeks partnership level position with a firm in New England or up-state New York. Reply Box #1361-826, *Progressive Architecture*.

"Project Interior Designer: ASID, BS Design, 14 years experience Educational, Institutional and Commercial facilities. Seeking position with quality Architectural or Design firm. Geographical location open. Resume and Portfolio. Box #1361-852, *Progressive Architecture*.

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Parking Consulting: Edison Parking is a major national parking company in: (1) ownership and operation of 100 facilities in nine states;

(2) consulting to architects for the functional design and economic analysis of parking facilities. The professionals and technicians of Edison's Consulting Division serve on the architect's team for development of a project, combining operating experience with design and economic disciplines. Background booklet and free Parking Design Checklist on request. Edison is a true independent consultant; we are not seeking architectural or engineering design work nor are we affiliated with any "package" building system. Contact Jerome Gottesman, Edison Parking Corp., 69 Academy Street, Newark, N.J. 201/643-3170.

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Vitruvius Designs Corp: Artistic renderings and scale models, for a better image. Commercial interiors from sketches to shop drawings. Regular drafting services available. Write Box 1316 Dept. PA, Radio City Sta., N.Y., N.Y. 10019 (212) 586-7382.

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P/A Book Store

Described on the following pages are architectural books that are now available to you from leading publishers. Each has been selected for its usefulness to you in the various aspects of your professional practice.

Book orders will be forwarded to the publishers who will bill you direct, including all required state and local taxes. As purchases of professional and business publications are tax deductible, we suggest that you retain copies of the publishers' invoices.

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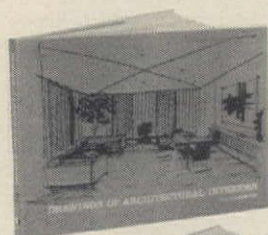
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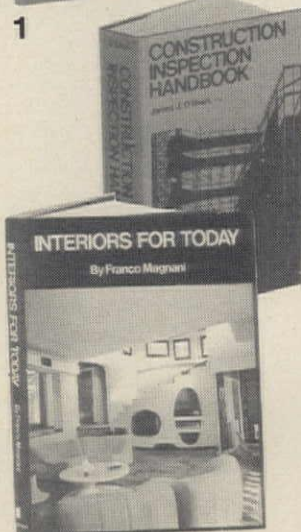
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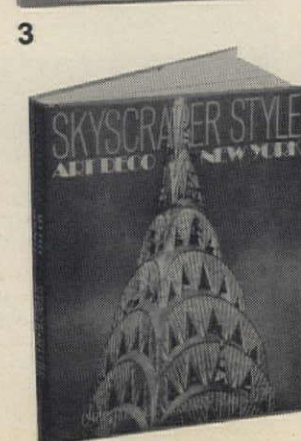
5



2



6



4



7

Technical/Design

1 Drawings of Architectural Interiors

Edited by John Pile, 172 pp., illus., . . . \$29.50

Compiled by an architect, designer, writer, and teacher. Contains a rare selection of sketches representing the work of 89 outstanding architects and illustrators, among them Le Corbusier, Florence Knoll Bassett, Frank Lloyd Wright, Walter Gropius, Mies van der Rohe, Richard Neutra, and I.M. . The reader will discover new ways to make his own ideas visual, and present them with clarity and drama.

Circle B601 under Books.

2 Construction Inspection Handbook

By James J. O'Brien, 512 pp., 140 illus. . . . \$17.95

Outlines the duties, requirements and interests of the construction inspector. Describes the "whys" as well as the "how-tos" involved in observation of construction quality. Including handy checklists to work from, the book shows you exactly what should be reviewed and inspected.

Circle B602 under Books.

3 Interiors for Today

By Franco Magnani, 160 pp., 121 illus., . . . \$25.00

In this one volume, the work of Europe's most outstanding designers and architects is presented, illustrating the best in modern interior design. Written for the professional interior designer and architect who wants to see the newest in contemporary interior design, or the layman who wants fresh ideas for his own decorating.

Circle B603 under Books.

4 Skyscraper Style Art Deco New York

By Cervin Robinson and Rosemarie Haag Bletter, 220 pp., illus., . . . \$20.00

Illustrated by Cervin Robinson, one of America's finest architectural photog-

raphers, this book studies the Art Deco buildings of New York, their European and American sources, their main features and the architects' intentions in designing them. Valuable to the historian of art and architecture, the volume will be especially treasured by city dwellers everywhere.

Circle B604 under Books

5 The Modern Chair

By Clement Meadmore, 191 pp., illus., . . . \$18.95

In one volume, the author explains and critiques the classic chair forms currently in use, relates them to their counterparts in history. Profusely illustrated with photographs and scale drawings, many of them the designer's own. Must reading for architects and interior designers who need to know the "why" of chairs they select.

Circle B605 under Books.

6 The Measure of Man:

Human Factors in Design, Revised and Enlarged Edition

By Henry Dreyfuss, Illus., . . . \$16.50

The portfolio of anthropometric data is accompanied by a 20-page book of design specifications and bibliography. It contains 32 charts, including two of life-size, standing human figures. These and the 30 others (9 1/4 x 12 1/2) provide measurements of every part of the human body in standing or sitting positions, including sight lines, reach, and other design factors.

Circle B606 under Books.

7 Problems of Design

By George Nelson, 206 pp., 116 illus., . . . \$8.95

Twenty-six essays offer factual information, appropriate illustrations, and clear analysis of the world of modern design. Included are chapters on: problems of design; art; architecture; planning; and interiors.

Circle B607 under Books.



8 Perspective: a new system for designers

By Jay Doblin,
68 pp., illus., . . . \$7.50

The first system developed to solve the kind of drawing problems encountered by designers. Eliminates the complex mechanical drawing that an architect normally employs in his traditional way of working with plans and elevations. The system offers a simpler method of visualizing any three dimensional object accurately and quickly.

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9 Marinas: A Working Guide to Their Development and Design

By Donald W. Adie,
336 pp., illus., . . . \$39.95

Boating occupies an increasingly important position in the major growth industry of leisure. Because boating involves vast expenditures, and the need to conserve and use water resources wisely, these facilities demand high expertise in planning and design, which this up-to-date guide provides.

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10 Trees: For Architecture and Landscape

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